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INCORPORATING LAWN CARE INDUSTRY



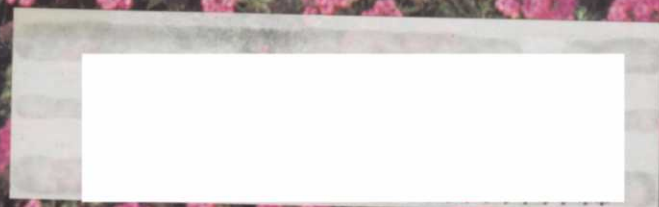
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AS WE SEE IT

RON HALL, SENIOR EDITOR



Industry finally making some headway in Washington, D.C.

Amtrak's Capitol Limited usually slices right through the night on its Washington D.C./Cleveland/Chicago run. This Friday afternoon the engine developed a limp just out of Rockville, Md.

Only 74 miles from Union Station and we're a half-hour behind already. The guy in the seat beside me is absorbed with his radio, which is tuned to the train's frequency. He says we're changing engines at the rail yard in Cumberland. Otherwise, it's going to be a long, slow pull up the mountain to Frostburg.

The prospect of digging my Dodge out of a mountain of snow on a frigid Cleveland pre-dawn is keeping me from feeling too chirpy anyway. (Plow jockies, I know from previous trips, bury anything they can't push out of the way.)

Anyway, I'm having these powerfully positive thoughts about the previous week in Washington D.C. The growing prospect of a hot meal served on tables with real linen in about an hour is, I'll admit, warming my recollections.

This last week in February, it seems to me, unfolded about as well as I or any of us in the lawn/landscape industry could have hoped.

Early on, about 100 of us—most of us from the Midwest and the East—jammed into Constitution Hall with the larger U.S. Chamber of Commerce group to see President Bill Clinton pitch his economic plan. He gave it to us, 35 minutes worth.

Us lawn care types then gathered with veteran Capitol Hill staffers, and one lobbyist for a how-to-win-friends-and-influence-people-on-the-Hill briefing. This was the warm-up to PLCAA's 1993 "Day on the Hill." (Co-sponsors were Lesco, Inc., Miles, Inc. and Sandoz Agro, Inc.)

By mid-week we'd fanned out in both Senate and House office buildings to meet with our respective legislators and their aides.

Gene Poole, a lawn pro from Van Wert,

Ohio, and I finished our rounds in Rep. Paul Gillmor's (R-Ohio) office.

Rep. Gillmor, a big man, greeted us genially. He gave us 15 minutes. He seemed to be genuinely interested in our industry and our message.

I'm feeling better and better about the green industry's growing presence in Washington. Law makers and their staff (never underestimate the importance of staffers) are starting to sound supportive.

They're learning more about the positive work we do. Their files contain our literature.

Some have heard from us every year now for the past four years.

What a difference these four years have made. That first year, many of us didn't even know which metro stops to use. We scrambled through office buildings, mostly lost. But, we scrambled.

Dick Ficco, a lawn care business owner from the Boston area, says it best.

On his first PLCAA visit to Capitol Hill, he says, he didn't know quite what to expect. On the second he was still feeling his way around, and on the third trip he was starting to get the industry's positive message across. On this, his fourth trip, he came to get something accomplished.

You think about people and about what they've said on a sleepy night train.

The Capitol Limited lurches to a stop beside a massive, roofless railroad roundhouse, a Civil War-era Stonehenge. It's collapsing one red brick at a time. Here's Martinsburg, W.V. with melting snow dripping from ancient buildings.

Waiting for me tomorrow morning, I'm sure, is one very cold car in a mountain of snow.



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INCORPORATING LAWN CARE INDUSTRY

APRIL 1993 VOL. 32, NO. 4

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Mole cricket and spittlebug control is getting most of the research. The future looks bright, thanks to nematodes.

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The wet summer of '92 suppressed much pest activity. But a normal weather pattern in July and August this year will bring the grubs back.

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Golfers responded positively to a different kind of posting program in Nebraska. This program, using write-on, wipe-off signs, also served to inform golfers of other maintenance practices.

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The requirements to become a good lawn care franchisee are wide-ranging, according to Canadian businessman Dick Nelles of Nutrilawn International.

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On the cover: verbena canadensis brightens up this landscape by Post Properties of Atlanta.

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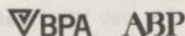
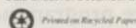
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ASK THE EXPERT

DR. BALAKRISHNA RAO

Poison ivy remedies, warnings

A number of our employees working on landscaping jobs where there is poison ivy are affected by the plants upon contact. How is poison ivy spread from one part of the body to another? Does it get into the blood stream? What can be done to prevent this problem?

Solution: Poison ivy contains toxic oil (resin) produced from leaves, stems and roots. Secretion of oil occurs generally when the plants come in contact with skin. Reports indicate that irritation can result from touching a dormant plant or recently dead plant, or even from pruning tools which come in contact with the plant.

Symptoms of poison ivy contamination include a rash. Eventually affected areas turn red, producing blisters, swelling, burning, itching and may lead to fever in some instances. Medical attention may be required if the problem is severe. Reports indicate that poison ivy is not spread by the watery liquid within the skin blisters. Also, I am not sure whether or not the ivy oil enters the blood system. My guess is it spreads only on the external skin*. The oil from the plant causes the itchy rash reaction. Washing the skin immediately after coming in contact with poison ivy may reduce the symptoms.

The resin sets up in the skin five to 15 minutes after exposure, after which washing will not help.

People who are sensitive to poison ivy should learn to recognize it and where it grows, and if possible, avoid any contact. Your landscaping job probably makes avoidance difficult, so wear gloves, coveralls, long-sleeve shirts, etc., to protect your skin. Wash hands, arms and any other body parts that may have come in contact with the plant with soaps such as Fells naptha soap. Wash contaminated clothing.

When large areas of the body or delicate areas such as eyes are involved, get prompt, professional medical care.

Consider using materials such as Technu on the body of sensitive persons prior to working in an area having poison ivy plants. Reportedly, the material helps against poisoning if applied before and/or after coming in contact with the plants.

(*Ed. note: we checked with the editors of *Dermatology Times* magazine, who verified that the poison ivy resin remains on the skin surface.) Partially excerpted from an article, "Poison Ivy Cures Founded on Myth," by Sharon McDonald, resident in dermatology, Columbus, Ohio.

Getting the most out of broadleaf control

This year we had a lot of service calls from our clients related to poor broadleaf weed control in spite of using postemergent herbicides. Why do you think we are having this problem? Now, we are thinking of applying the herbicides in the fall. How effective would this be? (PA)

Solution: In general, broadleaf weed control service calls are the major service calls in our industry. This is partly because of the way the treatments are programmed. For example, most

practitioners would not include any broadleaf herbicide in treatments until late spring. Therefore, the clients' lawns treated prior to this time may present a weed problem before the second treatment is scheduled. Clients may not be willing to wait for weed control until the second treatment, creating a need for a service call. Perhaps explaining to clients how these materials work and how they manage the weeds would help minimize service calls. This would involve educating the practitioners as well as the clients.

Other factors to consider are the cold and wet conditions which existed this year in many parts of the country. Weed control is more effective if weeds are actively growing. Rain before the herbicide has dried on the weed foliage may reduce effectiveness.

Concerning fall treatment with herbicides, turfgrass researchers at Cornell University have found that fall is the best time to apply postemergent herbicides to control broadleaf weeds in turf. Winter annual broadleaves and perennials are easier and more effectively controlled at that time, and the turf has more time to fill in the open areas before spring weeds germinate. Cornell scientists suggest herbicide applications be made from mid-September to mid-October, or even as late as mid-November during mild years. Even though you will not see the response until next spring, the herbicide will be absorbed by the plants and move down to the roots, resulting in good control in the spring.

This approach sounds good from the agronomic standpoint. However, study this option on a small practical and business aspect of the program before planning to implement on a larger scale.

Another option would be to use preemergent broadleaf herbicides such as Gallery. Make sure this product is labeled for your use. Read and follow label specifications for better results.

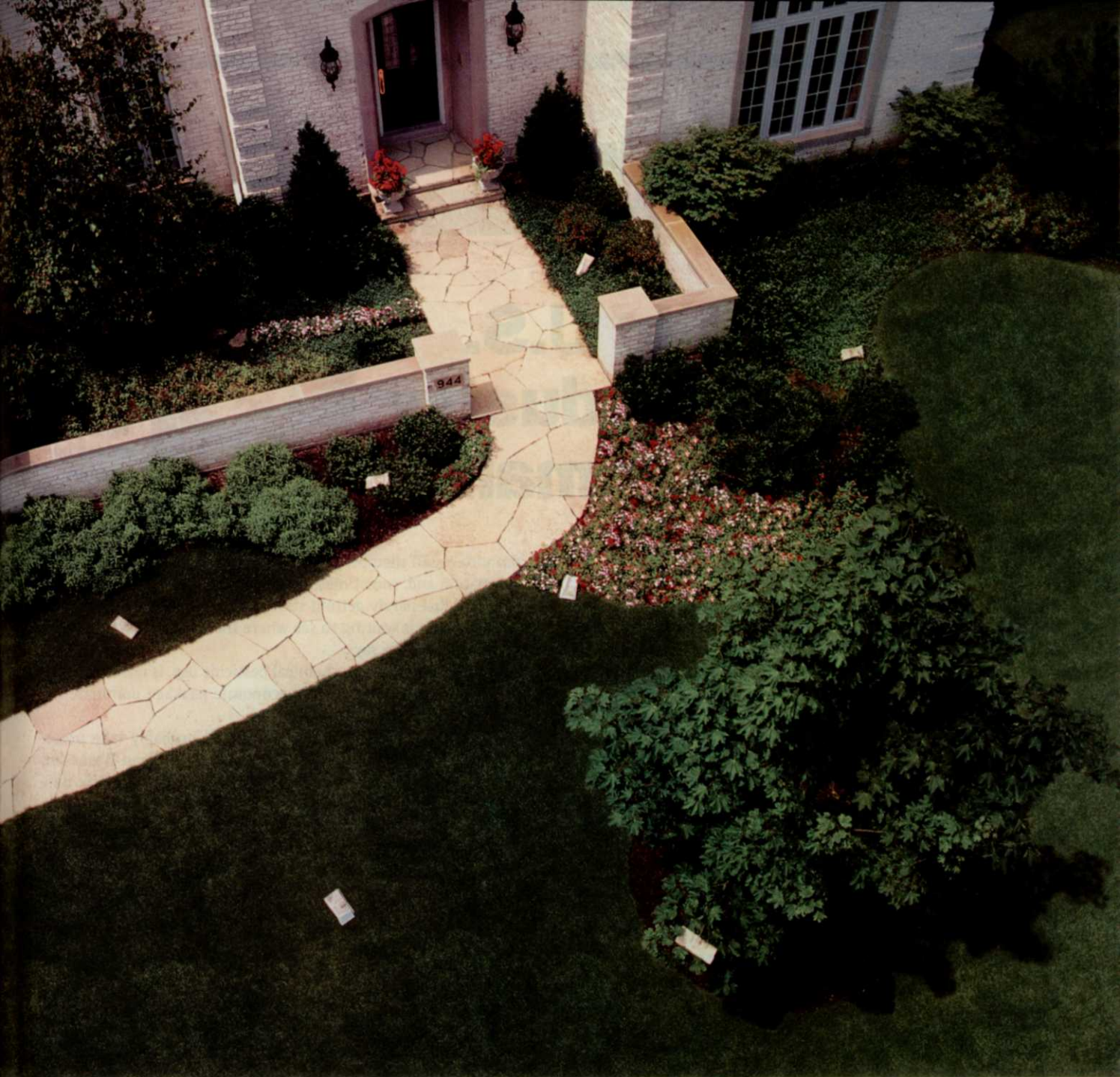
Ronstar and newly sprigged bermudagrass Can we use Ronstar herbicide on newly sprigged bermudagrass? (GA)

Solution: Yes, Ronstar 50W and Ronstar 2G are now labeled for use on newly sprigged bermudagrass. However, it is not labeled for use on home lawns. Both the Ronstar 50W and 2G herbicide use is restricted for golf courses, commercial sites, etc.

Read and follow label specifications for best results.

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

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



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LANDSCAPE MANAGEMENT

INCORPORATING LAWN CARE INDUSTRY

New faces in U.S. Capital but industry challenges remain



Capitol Hill staffer James Aidala says legislators divided on preemption.

Federal preemption will remain elusive this year; industry must continue to work at local and state levels.

■ Washington D.C.'s message to the chemical green industry: Lobby. Play the legislative game. But, don't neglect local issues either. Congress this year isn't likely to pass legislation that will preempt local political bodies from enacting their own pesticide use laws. So far, only scattered local jurisdictions have rushed toward pesticide-use laws. Where they have, it's created havoc.

"You probably have some time to work," says Claudia McMurray, minority council, Senate Committee on Environment and Public Works.

The reason: the unprecedented number of new faces in Washington D.C.—President Bill Clinton and his administration, new EPA chief Carol Browner, 110 freshmen representatives, 11 new senators. (That doesn't even include new or reassigned legislative aides, individuals working directly with legislators, and

committee staff members, the people who supply legislators with information and, sometimes, opinions that drive legislation.)

"We're just barely getting started," says McMurray. Everybody in Washington is waiting to see where the Clinton administration is on the issues, she says.

So far lawn/landscape chemical pesticide use, is not high on its list. Health care and Clinton's economic package dominate the administration's attentions.

Other issues, says McMurray, that will probably take precedence over pesticide use deliberations include a Clean Water Act, the reauthorization of Superfund, amendments to the Safe Drinking Water Act, and a stronger Endangered Species Act.

James Aidala, a staff member with the House Government Operations Committee, says food safety will be a bigger issue than lawn/landscape pesticides.

"Lawn care is going to be a very small piece of that puzzle," he says. "So, the more that you (green industry) can have worked out among yourselves, the better off you'll be. Congress is not going to spend a lot of time on these issues...given all these other things going on."



Pennsylvania lawn care professionals (l. to r.) Bob Williamson, Kenneth Clemmer, and Larry Ellmaker practiced delivering the message they were going to present the following day on Capitol Hill to, right, Tom Diederich, Orkin Pest Control, Atlanta.



Meeting with Ohio Senator John Glenn's staff in February: (foreground to back) Mark Laube, Barefoot Grass Lawn Service; Gene Poole, Emerald Green/Bolton Lawn Care; Michael Dietrich, Lesco, Inc.; and George Gossett, DowElanco.

Although Aidala says the green industry and its critics seem to be approaching common ground on posting and chemical registries, preemption will be difficult to pass this year.

Last year, industry's lobbying effort to get federal preemption legislation ran out of time.

The 102nd Congress ended before the full House Agriculture Committee could act upon a bill to prevent local governments from regulating the use of pesticides. Almost 100 cosponsors in the House and 22 in the Senate had signed onto the "National/State Pesticide Regulation Partnership Act of 1991" which also set strict standards for certification and verifiable training.

Most green industry associations willingly supported the proposed bill's certification and training provisions.

Although legislation for federal preemption could get another legislative push this year, "it's not the sort of thing that's going to get worked out easily," warns Stan Ray, staff director for The House Department Operations and Nutrition House sub-committee.

"Preemption is going to be the one issue where members divide," adds fellow staffer Aidala, "It will get swept up in larger politics, especially agricultural uses of products."

Although 12 states passed new preemption legislation in 1992, industry suffered setbacks in Maryland, Kentucky and Washington. This year could see Alabama, Illinois, Massachusetts, and Texas consider the issue also.

On another front, Senator Joseph Lieberman (D-CT) will "probably be reintroducing" his "Notification of Chemical Application Act of 1992," says top Lieberman aide Sara E. Walzer.

Although no lawn care hearings had been planned as of mid March, Walzer said hearings will take place as the bill goes through committee.

Posting, notification and registry provisions in Lieberman's newest proposal are toned down from the Senator's first effort in 1990. Even so, industry remains uneasy with its intent.

Lieberman's proposed amendment to The Emergency Planning and Community Right-To-Know Act sets stiff fines and jail terms for lawn pros who willingly don't notify—also, homeowner posting.

PLCAA, for its part, has its own "lawn care bill" which it threatens to push should Lieberman's bill surface.

—Ron Hall

LC pesticide advisory board gave industry and its critics their say

■ We may not have the LCPAC to kick around much longer.

LCPAC? Few turf/landscape professionals know of the Lawn Care Pesticide Advisory Committee (LCPAC). Ostensibly, its purpose has been to explore ways "to reduce the public's risk to exposure by lawn care chemicals," said Vic Kimm of the U.S. EPA. But, in reality, it's been a protracted debate with representatives from specialty chemicals and allied user groups versus pesticide critics, with the EPA and regulators acting as referees.

Indeed, the LCPAC itself hasn't agreed on whether its deliberations are fueled by safety concerns, a view sought by anti-pesticide members of the board but hotly denied by industry.

"People continue to buy and use our products," said William Chase, Jr., a LCPAC member representing Chevron Chemical. "The sales information sends us a positive message that there's no overwhelming concern by the public."

The LCPAC, formed by the U.S. EPA last spring, has met twice near the capital. It's advisory. Its charter expires in May.

Some of its 28 members represent the chemical and lawn care industries. Others represent public interest groups that seek stricter regulation and less use of pesticides.

continued on page 22

A plan to save our world

■ Vice President Albert Gore would save the world.

He would start by mobilizing the world's governments to cooperatively attack the earth's environmental woes, he writes in his book, "Earth in the Balance, Ecology and the Human Spirit" (Houghton Mifflin Company). The United States will spearhead this environmental crusade to save society from its headlong rush to ecological suicide.

Of interest to anyone involved with ag or specialty chemicals: somewhere among the ecological ills—and apparently down the list since Gore mentions it only in passing—is modern agriculture's profligate use of pesticides.

"The huge amounts of fertilizer and pesticides now routinely used in agriculture frequently drain off into the groundwater beneath the fields, contaminating them for many centuries to come," he says.

This is the kind of generalization that Gore, a former newspaperman, likes to lean on throughout the book. There are many others.

"Earth in the Balance..." is a call to

action. Indeed, it covers a lot of real estate, an entire global environmental rescue plan in just over 400 pages.

Gore wrote the book while he was Sen. Al Gore from Tennessee, and after he'd failed in his 1988 Presidential run. It appeared on bookstands during 1992 when Gore was again blistering the campaign trail. The book takes some sharp jabs at former-opponent and former-president George Bush and his environmental policies.

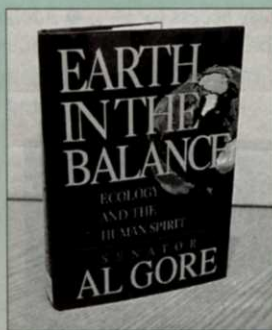
(Who cares now?)

Political jabs aside, Gore's oft-repeated bigger message is the listing of the Earth's largest environmental catastrophes-in-the-making. Then he tells how to solve them.

Gore's book is earnest and his concerns seem genuine. But, he stretches a little bit of science over an awful lot of ground. Even that little bit of science is hotly disputed.

For better or worse, Gore, as vice president, probably won't get a chance to reshape modern civilization in 1993.

—Ron Hall



HARDSCAPING: A one-time project that's great for referrals

Hardscaping projects, whether done in-house or by a sub-contractor, are stylish add-on services.

■ If your company has the resources, you might want to tackle a hardscaping project this summer.

Besides being a good one-time project—and one that you don't have to water and weed afterwards, hardscaping, in this case, paving stones, can really lead to referrals in the right neighborhoods.

The surface earth should be well-compacted before you lay the stone, advises Phil Walters, a production manager for Ruppert Landscape's Chantilly, Va. office. "Place pavers with drainage in mind," says Walters. "Have a way for the water to run off, and tamp the material as it's installed."

Walters also suggests that easy access to the site is important due to the weight of the materials. It should be an easy in and out pathway.



These Terra-Pavers, from Wausau Tile, can be installed over bituminous sand or mortar beds. They hold up well under pedestrian and moderate vehicular traffic.

Hard construction includes a wide variety of materials. Selecting the proper materials while balancing aesthetics and cost effectiveness requires skill and ingenuity. Paving materials can be made of asphalt, brick, concrete, stone, tile or wood.

- Brick is easy to manufacture and is easy to find in a variety of sizes, shapes colors and textures. Brick pavers are made specifically for outdoor walkway and floor surfaces. They are sized to permit a wide variety of paving patterns (some of which are shown at right).

Their thickness ranges from 1-1/8-inches to 2-1/4 inches. Thin pavers are a cost-effective choice when specifications call for brick walks to be set in a mortar bed.

- Turf blocks are a type of concrete paver with openings or slots for growing turfgrass.

- Glass block is available in a range of styles and functions.

- Adobe, a kind of mud brick, is also a good choice for decorative use or special effect. Many concrete materials can be used for paving and other landscape applications. Concrete toppings or coatings are presented by manufacturers as solutions to problems generated by certain uses or conditions.

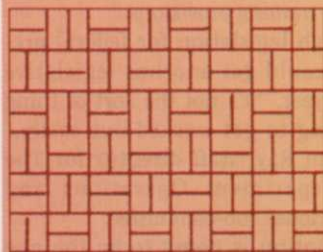
Patterned concrete may be cast in place by a number of proprietary systems in the industry. One is Bomanite, a specially finished concrete paving system. Concrete pavers can be formed in a wide range of textures and finishes. Interlocking concrete pavers can be formed in a wide range of textures and finishes.

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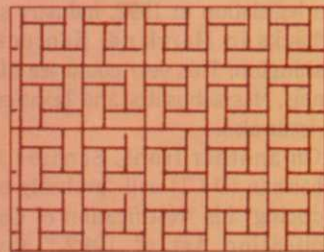
BRICK

PATTERNS

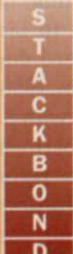
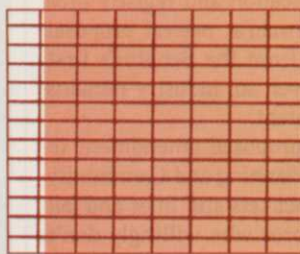
HERRINGBONE



BASKET WEAVE



BASKET WEAVE, VAR.



courtesy The Brick Institute, Reston, Virg.

Granite pavers give authentic look to racing monument

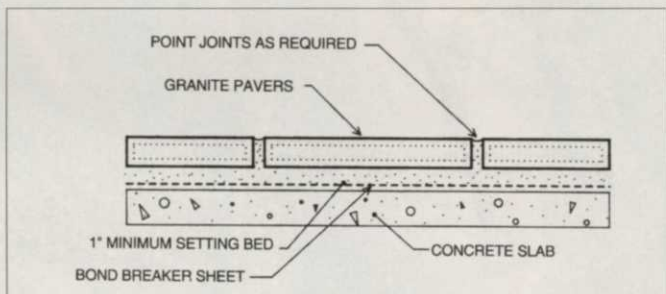
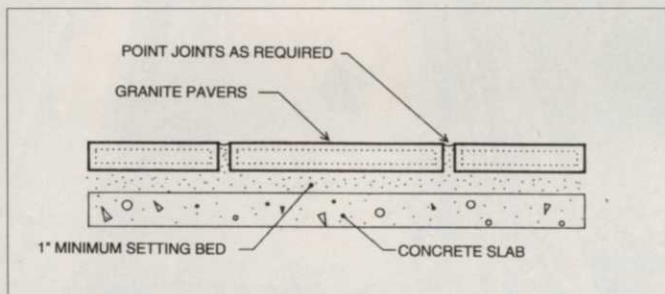
■ Thoroughbred Park, a new public park in Lexington, Ky., includes detailed and ornate design elements of granite and bronze which are meant to capture the spirit of racehorses, owners and breeders. But creating the park required unique design, technical and fabricating capabilities from a variety of product suppliers. Cold Spring Granite Co. provided the paving and other granite details for the project.

The park is divided into five areas representing an aspect of the world of horseracing. Highlights include bronze statues depicting champion racehorses and jockeys. The center of attention is a simulated granite racetrack featuring seven life-size bronze thoroughbreds and jockeys barreling down the home stretch.

"The entire racetrack is created from granite. We worked with the project architects to select the appropriate color of granite and cut the stone at just the right angles to replicate an actual horseracing track," according to Jodie Moore, structural sales representative

for Cold Spring. Carnelian, a mahogany-colored granite, matches the reddish-hued earth found on racetracks. Cold Spring fabricated thermal-finish, split-faced pavers and set them side by side to create the rough surface on which the bronze statues stand. "Having a split-faced showing is very unusual," says Moore, "but it was the unique design element that allowed us to create just the look we were after."

The project required 9000 square feet of 1-1/2 inch thick, and 12,600 square feet of 3-inch thick thermal Carnelian paving.



Installing granite pavers on slab, left and on slab with bond breaker. Courtesy Cold Spring Granite Specialties.

1. A dry pack mortar bed is laid on a concrete slab and granite pavers are tamped into the bed.
2. The mortar may be hydrated with a latex additive in lieu of water to increase bond strength and add moisture resistance.
3. In this system, the expansion joints in the concrete must be carried through to the granite pavers at the same locations.
4. The joints may be pointed dry, fogged with water, or pointed with wet grout.

1. A bond breaker is placed on a concrete slab to separate from the setting bed.
2. The setting bed is applied on top of the bond breaker sheet.
3. Granite pavers are tamped into a dry pack setting bed.
4. Latex additive may be added to mortar in lieu of water. This will increase bonding strength and provide moisture resistance.
5. In this system, the expansion joint pattern in the concrete does not have to be duplicated in the granite paving pattern breaker allows the paving system to "float" on the concrete slab.

Some paving material suppliers

Cold Spring Granite Specialties, 202 South Third Ave., Cold Spring, MN, 56320.	300
Hanover Architectural Products, Inc., 240 Bender Rd., Hanover, PA 17331.	301
Pave Tech, Inc., Advanced Paving Technology, P.O. Box 31126, Bloomington, MN, 55431.	302
Stonwurks, Inc. 314 Lincoln Ave., Clay Center, KS 67432-2806.	303
Vespro, Inc. 40 Belvedere St., Suite 2, San Rafael, CA 94901; makers of Control-A-Root, a barrier which prevents roots from growing up into hardscaping.	304
Wausau Tile, Inc., Terra-Paving Division, P.O. Box 1520, Wausau, WI 54402-1520	305



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KILLS THE QUEEN.

Athletic fields: renovation or reconstruction?

■ All too often, the blast of an official's whistle at the start of a sporting event brings two opposing teams together on a barren field speckled with ragged tufts of green. Many of these tufts are the sad remnants of a once-proud turfgrass cover, intermingled with coarse, aggressive weeds.

In dry weather, the playing surface is hard from compaction, rough from previous activities, and dusty from a lack of turf cover. If it rains a week before the event—or worse, during the event—the surface is slippery, muddy and soft, with virtually no traction.

Such conditions give natural turf playing surfaces a bad reputation. However, criticism of natural turf fields should be aimed at weaknesses in construction or maintenance, not the limitations of natural turf.

Success in providing superior natural turf playing surfaces often means overcoming or correcting errors in construction. Neglect, for even a relatively short period of time, jeopardizes previous investments.

Though turf appearance is undoubtedly important, durability to intensive use under a wide range of conditions is more critical.

Though athletic field renovation may seem successful, an improperly constructed field will rapidly decline again.

by Henry W. Indyk, Ph.D.

Costly mistakes—Successful athletic fields are based upon similar principles in design, planning, construction and maintenance. Failure of these surfaces also is based upon a set of similar mistakes:

● **Drainage considerations:** Poor drainage not only affects playability, but negatively influences turfgrass growth and increases maintenance costs. (See sidebar.)

● **Improper specifications:** Too often, in the original construction of an athletic field, standard specifications are used. Each site should be evaluated critically before formulating accurate specifications to avoid a field with “built-in” problems that are difficult or impossible to correct, even with excellent maintenance procedures.

● **Lack of specification enforcement:** The best of specifications are of little or no value unless construction procedures adhere to them.

● **Maintenance deficiencies:** A well-planned maintenance program should include equipment, materials, personnel, and an adequate budget. The supervisor should be conscientious and knowledgeable in turfgrass management principles and techniques.

The single most important factor: drainage

■ The single most influential factor in the failure of natural turf fields is improper drainage.

Perhaps the most important reason for overlooking drainage as a critical factor in athletic field construction is not understanding or appreciating its importance. Unfortunately, in many instances, adequate drainage is negatively affected by cost-cutters who do not realize the future cost of improper drainage.

In some cases, efforts to improve drainage are to no avail. Such failures most likely can be attributed to improper specifications and/or other deficiencies in construction. Some of the common faults of ineffective performance of drainage systems include:

● **Provision for surface drainage only.** A crowned or turtle-backed field with a few catch basins on the sidelines can facilitate removal of surface run-off, but will do little for improving internal drainage.

● **Improper design** of the drainage system involving pipe spacing, depth, grade and outlet.

● **Improper grade** for installation of drainage pipe.

● **Heavy-textured material in backfill** that restricts percolation of water to the drainage pipes.

● **Improper physical properties of topsoil** above the drainage system. Soils containing too much silt, clay and very fine sand as the growing medium for the turf tend to restrict proper drainage due to slow percolation of water. Consequently, during rainy conditions, such soils tend to be soft and soggy in spite of a properly installed drainage system. These soils compact readily when subjected to traffic. Air porosity is reduced by both moisture saturation and compaction, resulting in a less favorable environment. This is reflected by a shallow root system, weakened top growth, reduced wear tolerance and turf deterioration.

—Dr. Indyk



Somebody made a big mistake with this newly-constructed field when they did not allow for proper drainage.

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How The Nomix™ System Works. This revolutionary weed control system covers a lot of ground – nearly every municipality in the U.K., the grounds of Windsor Castle and championship golf courses the world over to be exact. And now, it's complete line of unique applicators and herbicides are being made available in the U.S. The Expedite now features an upgraded head and spiral disc for greater flexibility. With the addition of the Compact and a full-range of four new herbicide formulations, over 90% of the U.S. markets' needs will be met. The unique features of the Nomix system include:

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Remember... Just one Nomix cartridge (shown here) covers the same area as the backpack to the left!



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Circle No. 133 on Reader Inquiry Card



An athletic field after stripping and stockpiling of topsoil shows promise for the future.

● **Abuse in field use:** There are limits to how much you can use turf—even good turf. Damage will be most serious where proper construction procedures have been bypassed, particularly with excessive soil moisture.

● **Inadequate facility-to-use ratio:** The surging interest in outdoor athletic activities has increased pressure on existing facilities. Because money or space is not always available to add fields, the use of existing facilities is intensified. Improperly constructed fields are less able to accommodate more intensive use without serious deterioration of the turf cover.

Temporary renovation—Near miraculous results can be achieved by temporarily restoring improperly constructed or maintained fields. Superior varieties of turfgrasses (particularly among the Kentucky bluegrasses, turf-type tall fescues and turf-type perennial ryegrasses adapted for athletic fields) can be effectively established in existing fields by

- a) core aeration to relieve compaction and
- b) verti-grooving to prepare a seedbed without destruction of grade or established turfgrasses.

The new seedlings introduced during renovation can be nurtured to a mature, dense turf with adequate provision for proper pH, nutrients, supplemental irrigation, mowing and restrictions on use.

To fully restore a field in this way, you

must restrict use for six months, at the least. If this amount of time cannot be sacrificed, restoration with a high quality sod can provide instant results.

As impressive and effective as a successful renovation effort may seem, an improperly constructed field will rapidly decline again. Repeated renovation efforts will follow the same costly and discouraging pattern until inherent construction problems are corrected.

Reconstruction—For a successful natural turf field, essential planning, design, construction, maintenance and use principles must be followed.

Experts in field reconstruction, such as Turfcon/GSI Consultants of the Greenway Group based in Horsham, Pa., evaluate each field. Their planning and design, coupled with overseeing all reconstruction processes, and establishing a sound maintenance program, can convert problem-laden fields to high quality natural turf.

Natural grass has been, and will continue to be, the best playing surface for a wide variety of outdoor sports and playground activities. Its characteristic resiliency and cushion not only contribute to the enjoyment of a specific sport, but also provide superior footing and reduction in sports surface-related injuries. These advantages, combined with aesthetic and economic considerations, make natural turf and its management high priorities for sports in coming years.

What field consultants offer:

✓ On-site inspection for specific deficiencies in:

- grade,
- drainage,
- soil characteristics,
- turfgrass conditions and
- any other factors conducive to athletic field problems.

✓ Topsoil and subsoil samples are taken for physical and chemical analyses.

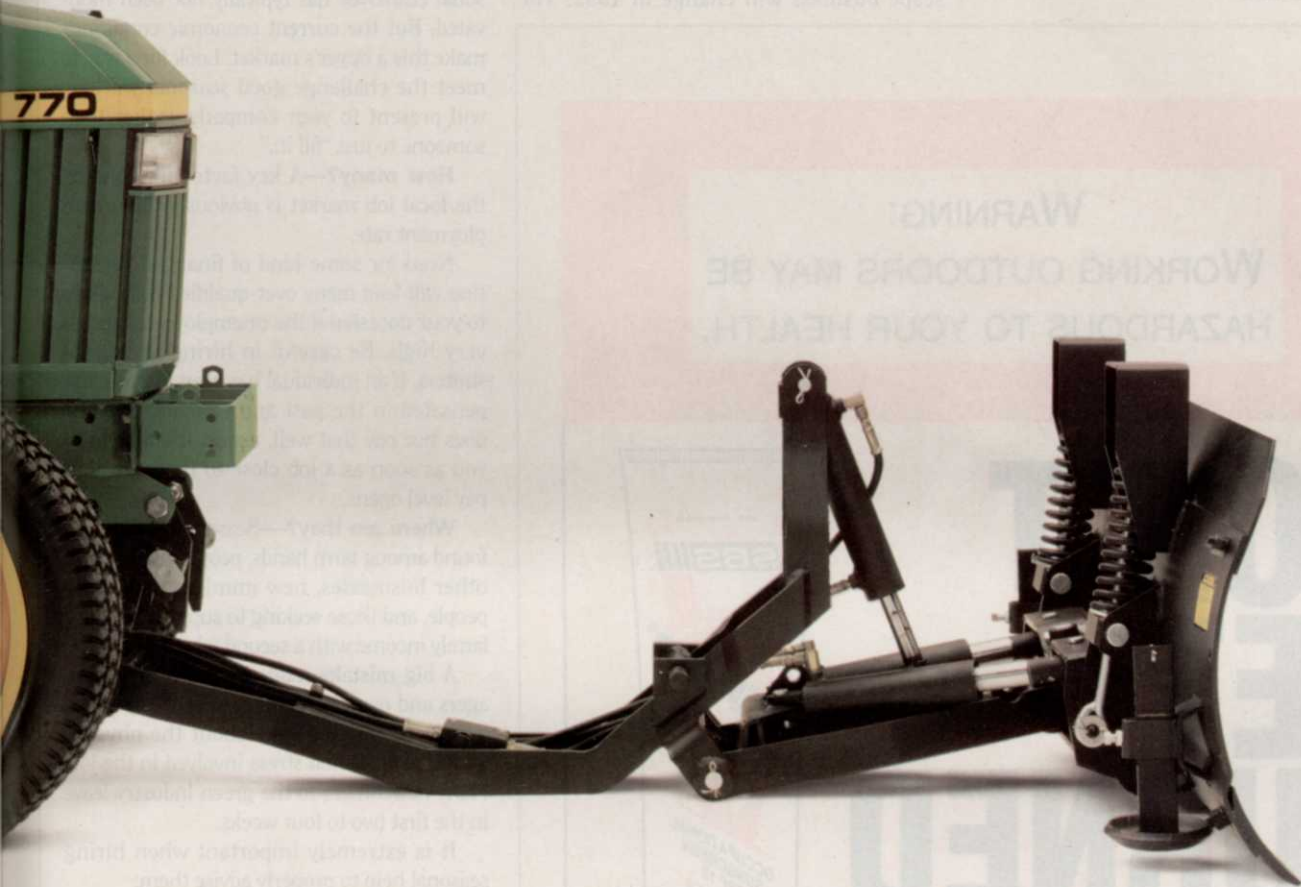
✓ Individual site-specific specifications for each field. They may include:

- provision for stripping, stockpiling, and processing of existing topsoil, for use in the rootzone mix;
- selection of the sand used in the modification process;
- the quality of sod; and
- the characteristics of the soil in which the sod is grown.



—Dr. Henry W. Indyk is turfgrass consultant with Turfcon/GSI Consultants of the Greenway Group, Horsham, Pa. and extension specialist emeritus in turf management, Rutgers University. He serves on the board of directors of the national Sports Turf Managers Association.

Watch closely.



We're about to
show you how easy
it is to hook up
a John Deere.

Best seasonal help can easily be yours

Seasonal workers can make welcome contributions. Determine your needs, and how they can fit into the picture.

by E.T. Wandtke

■ Using seasonal, temporary workers lets companies avoid extra costs which come with full-time personnel, and at the same time bring new enthusiasm into the lawn or landscape company.

Why they'll work—The skills and quality of potential seasonal employees applying for jobs with your lawn or landscape business will change in 1992. The

applicant will possess more skills, be more performance driven, and may be an overall better potential employee than you have seen in the past.

Generally, these people are looking for more than just a job; they are seeking the opportunity to learn more skills and a way to apply their knowledge. In the past, the seasonal employee has typically not been motivated. But the current economic conditions make this a buyer's market. Look for a way to meet the challenge good seasonal workers will present to your company, rather than someone to just "fill in."

How many?—A key factor influencing the local job market is obviously the unemployment rate.

Need for some kind of financial restitution will lead many over-qualified individuals to your doorstep if the unemployment rate is very high. Be careful in hiring these job-shifters. If an individual has been highly compensated in the past and your job opening does not pay that well, expect them to leave you as soon as a job close to their previous pay level opens.

Where are they?—Seasonal workers are found among farm hands, people laid-off from other businesses, new immigrants, retired people, and those seeking to supplement their family income with a second job.

A big mistake made by personnel managers and owners is failing to properly advise a prospective employee about the physical and environmental stress involved in the job. Many newcomers to the green industry leave in the first two to four weeks.

It is extremely important when hiring seasonal help to properly advise them:

- the job is physically demanding
- they will be expected to work in almost all weather conditions; and
- the hours are sometimes longer than usual.

When to recruit?—Establish how many extra people you need two months before you advertise. Let current employees know of your needs, and perhaps they can recruit for you.

Post notices at local churches. The quality of those applicants, their integrity and highly dedicated work ethic often has resulted in higher-than-expected performance from all of the employees they come in contact with.

Consider hiring retired people. They may not be capable of performing all of the jobs, but they may surprise you. In addition, their dedication is unbelievable.

continued on page 96

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Over/under billing: how to do it, and how to do it easier

Here's a tool that identifies the difference between amount billed and actual monthly costs.

by Kent Miller

■ Usually, construction projects do not start at the beginning of the month or end on the last day of the month. When construction is under way on one or more projects that cross into the next month, it is important to be able to allocate earnings on the monthly income statement accurately.

Larger projects can run for months or years before reaching completion and acceptance. Billing cycles and conditions may also vary from billing the whole project before the work is started, to no billing at all until the job is done and accepted.

Regardless of the billing techniques, the monthly income statement should indicate some earnings.

We use a program called "over/under," a simple Lotus spreadsheet that assists us in determining what amount to chart as income each month.

We begin by entering the contract amount, estimated direct costs and estimated gross profit anticipated. As the work progresses, we identify all of the costs incurred during the month through job costing. At the end of the month, those costs are plugged into "costs to date."

Using the estimated gross profit anticipated, we apply the same gross profit to the costs we incurred that month to derive our amount earned. The amount earned is compared to the amount billed and the dif-

ference is typically over-billed or under-billed.

A simple example—Let's use an example using simple values. A construction project has a value of \$500,000 with direct costs of \$400,000. That leaves \$100,000, or approximately 20% as a gross profit. During the first month of construction, the job incurred total costs of \$80,000. With a 20% gross profit, income for the first month would equal approximately \$100,000. If no billings were made for that month, we'd be \$100,000 under-billed. We would then add \$100,000 to our monthly income statement for that month.

If we had billed the same project \$150,000 for that month, we still would have only earned \$100,000, so we would be \$50,000 over-billed for that month. In that case, we'd reduce our monthly income statement by \$50,000.

When you have several projects on this worksheet, the total entered in "Over/Under Billed" is the result of the whole, and that amount is added to or subtracted from your monthly statement.

Exceptions—There are some instances when this approach will need some adjustment to accurately reflect your earnings. An example would be if you use the multiple overhead recovery system (for estimating, labor, equipment, materials), and subcontractors are marked up at varying percentages, providing an overall mark-up on

the entire project.

Assume the first \$80,000 in costs was a subcontractor you only marked up 10%: your actual earnings that month would be less than the overall mark-up. So this gives you an average mark-up over the course of the construction, and not a specific mark-up on the actual costs incurred.

Now let's assume that you're two months into the construction project when you realize it's going to take another \$50,000 in additional costs. In this instance, we would enter \$50,000 to the column "Additions to Cost," which revises our cost in the "Total Revised Cost" to \$450,000. It adjusts our "Gross Revised Percentage" to 10%. The shock comes when you have to pay back the gross profit you should not have taken in the first place.

I use this program to measure anticipated gross profits. I'm quick to identify "Additions to Cost" so I don't take profits too early and then have to pay them back. Adding costs to the "Estimated Cost to Complete" column lowers the "Percentage Gross Revised" and reduces the amount of gross profit earned each month. This is also a good column to use to provide for plant replacements and other warranty-related items that might linger before they actually become a cost to the job.

When the job is done and all the costs are in, adjustments may be necessary in the "Additions to Cost" column to have "Over/Under Billed" equal \$0 and then earn the gross profit you didn't want to take until completion. At this point, the final gross profit obtained is in the "Percentage Gross Revised" column.

Simply stated, our program assists us in identifying monthly income based on the costs we've incurred.

—Kent Miller is vice president of The Groundskeeper, an employee-owned company in Tucson, Ariz.

Washington from page 11

Four U.S. EPA officials, two state regulators, and two legislative staff members round out the committee.

The LCPAC has met three times, most recently in Alexandria, Va., on Feb. 25-26. Meetings last 1-1/2 days.

Points aren't conceded easily. Disagreements between members sometimes, but not often, cause sharp exchanges.

Even so, most members of the committee agreed, at least broadly, on these points at the February meeting:

Posting: signs consistent with what most states do now, 4x5 inches and in contrasting colors. Posting at common points of entry; more than one notice may be needed in some situations.

Notification and Registries: open registries with limits on the number of addresses one wants to be notified about, and annual

fees to pay for the notification program. In the case of hardship the fees can be dropped. The addresses one wants to be notified about must be supplied by the person joining the registry.

EPA says it's determined to write guidelines covering posting, pre-application notification and registries. Even the development of guidelines was debated.

"EPA's issuance of guidelines signals there is a problem, at least a consensus by this group that there is a perceived problem," said Chevron's Chase.

Public Citizen's Patti Goldman, took the opposite view. She said the EPA shouldn't be drafting guidelines but rather lawn care regulations.

February's meeting of the LCPAC meeting may have been its last. It's charter expires this spring.

—Ron Hall

With All The Abuse Your Turf Takes, Who Needs Root Pruning?



You know the story. The guys who swing an iron the way a lumberjack wields an ax are the same guys who yell the loudest when weeds give them a bad lie. So, with all the abuse your turf takes, the last thing you need is root-pruning from your herbicide. That's why you need CHIPCO® RONSTAR® brand G herbicide. University root pull studies show that CHIPCO® RONSTAR® G works without pruning turf roots. That means healthier roots and stronger, more durable turf. Best of all, just one pre-emergence application provides season-long control of 25 tough broadleaf and grassy

weeds—including goosegrass, crabgrass and Poa Annuu. You'll also appreciate the fact that CHIPCO® RONSTAR® G is labeled for use on a wide variety of ornamentals, and is now available in a new low-dust formulation that makes application even more convenient. CHIPCO® RONSTAR® brand G herbicide. It can't improve the quality of play on your course, just the quality of weed control.



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Circle No. 136 on Reader Inquiry Card

Stress value and need when you have to raise prices.

If your prices don't yield the earnings you might normally expect, you should consider raising them. But will your customers pay more?



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■ If your prices don't yield the earnings you might normally expect, you should consider raising them. But will your customers pay more? According to most lawn care and landscape companies, the answer is "yes," but only if you use sensible strategies. Here are some hints:

1) Base your prices on the value and need for your services.

Many landscapers concentrate on working for two-income families because they easily accept higher prices just to keep up appearances. They also have the money to pay more for such work, but not the time or energy to do it for themselves. Senior citizens whose incomes are more than comfortable will also accept higher prices for similar reasons.

2) Check competitors' prices for work that is comparable to yours. You can easily do this by reviewing these companies' ads. You might also use the phone and give the impression that you are a prospect. Ask what is charged for such services. Other questions might include:

- How experienced are your employees?
- Do you use modern equipment?
- Do you offer any free extra services or premiums?

Strike an average price for each type of work based on the answers, then compare these figures and features with your own.

Now, if you feel that you must charge more, let the customer know why by pointing out the extras which you offer but competitors don't—such as the use of more modern technology or more experienced employees. If need be, name the competitors.

3) Sell your professionalism instead of your price by stressing any (true) advantageous factors which your company possesses (such as how long it's been in business) and showing the written testimonials of satisfied customers.

Other ploys can be equally successful. One landscape contractor takes prospective clients for short drives in the neighborhood and points out the lawns and grounds of those for whom he has worked for many years. You can also

continued on page 62

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■ Want to develop a powerful information-gathering tool for your business at surprisingly low cost?

Implement a system to track and analyze all in-coming telephone calls to your business. These calls, particularly those from customers, are a treasure of data for the owner of any lawn care or landscape maintenance business.

Not popular, yet

Not everyone's already doing this. Only a half dozen or so lawn care business people, out of an audience of about 150 at a PLCAA educational session this past November, admitted they routinely log information they receive from in-coming phone calls.

This really surprised session leader Dr. Scott Mason, who described data coming from customer phone contacts as one of several information sources that allows a small company to compete with the big guys.

Mason is with Walker Research, a consulting firm headquartered in Indianapolis.

"If you collect and monitor data on

Phone logs: cheap but valuable info

✓ may increase their business with your company as you offer new or expanded services.

✓ may recommend your company to others.

The flip side is that customers can, as easily, dump your services and/or bad-mouth your company to family and friends. That is, if you don't have a system to record, analyze and respond to their questions, complaints or concerns.

But by maintaining an accurate and regularly reviewed telephone log, business owners can respond to customers on a more timely and personal basis. They can resolve complaints and answer service calls, and retain customers that might have been lost.

Marketing tool

The owner can also use telephone data for marketing purposes.

For example:

- Are contract renewals ahead or behind last year?
- On what day of the week do most new business inquiries in?
- What kinds of services are people

Date	Init	Caller -- Name / Address	Phone	Customer Prospect Other	Action	Action Date	Init

Action Date:	Action by:	Comment:	Other <input type="checkbox"/>
Follow-up Date:	Confirmed by:	Comment:	
Date:	Name:	Phone:	New Customer <input type="checkbox"/>
Taken by:	Address:		Old Customer <input type="checkbox"/>
Action to be Taken:			Prospect <input type="checkbox"/>
			Vendor <input type="checkbox"/>
			Other <input type="checkbox"/>
Action Date:	Action by:	Comment:	
Follow-up Date:	Confirmed by:	Comment:	

transactions, you'll be well ahead of competitors," says Mason.

Listen!

Concentrate on listening to your current customers first.

"Most of tomorrow's business comes from retaining today's customers," says Mason. Today's customers:

✓ can continue to do business with you. (Retaining a current customer is more cost effective than generating a new one.)

Two styles of phone logs are shown above. One is simpler, and could be used by almost any kind of business. The second is more customized and allows room for more comments about follow-up actions and a line to confirm that the customer is satisfied.

being referred to by customers?

Basic bean counting—particularly when it comes to customer information—is often overlooked or under-estimated by the small business owner.

"Somebody at your phone should record every call that's coming in, who called, when it came in, and all the information that you think you're going to need," says Mason.

—Ron Hall

Dacthal.[®]

For everything it doesn't do.

— Dacthal doesn't let you down. It means healthier turf and a difference you can see. And that makes you look good with your customers.

— Dacthal doesn't leach, because it isn't water soluble, and it's biodegradable, too.

— Dacthal doesn't damage roots regrowing after drought. And don't worry about newly sprouted turf* either. Dacthal is the right choice in high stress situations.



— Dacthal doesn't let weeds get out of control. On crabgrass, annual chickweed, spurge, foxtail, Poa annua, and over 15 other annual grasses and broadleaf weeds, Dacthal is the proven preemergent herbicide performer.

— Dacthal doesn't stress or damage roots, because turfgrass root systems have a high tolerance for it. And that means less stress and worry for you.

ISK Biotech Corporation,
Turf & Specialty Products Division
5966 Heisley Road, P.O. Box 8000,
Mentor, OH 44061-8000.



*Of uniform greening and 1 to 2 inches in height.
Always follow label directions carefully when using turf chemicals.
® Registered trademark of ISK Biotech Corporation.

Is your irrigation system operating at top efficiency?

As a major user of water, the green industry is in the spotlight. Save money—and our resources—by checking out your irrigation system.

■ If you or your department are under pressure from your superiors to cut costs, one of the ways might be taking a thorough look at your irrigation system and either recommending changes or consulting an irrigation designer.

"An irrigation system that is designed and installed correctly can save substantial amounts of money during the operational life of the system," says Kurt Hall of Water Management Specialists, Houston, Tex. "In most cases, the additional cost it would take to make the system water- and cost-efficient are returned in less than a year."

For instance, just using a triangular head pattern instead of a rectangular one is saving the city of Houston \$751.16 per month (see tables).

Many irrigation systems are installed without any consideration for the operations costs, Hall contends. Some of the reasons for this sad commentary on water conservation include:

- lack of design skill or knowledge;
- lack of the basic understanding of the relationship between plants and water;
- designing to a pre-conceived irrigation

budget;

- lack of familiarity with new techniques and products;
- not designing to the "big picture" (establishing precipitation rates, and irrigation schedules developed for the design);
- designing to installation cost instead of long-term and operational costs.

"The underlying reasons for poor irrigation design," Hall says, "can be broken down into lack of knowledge, skill and training; and profit motivation. When these two are combined, the results can be horrific."

1) Is the system designed for the application? There is no such thing as one size fits all.

2) Have the components been teamed efficiently? Make sure sprinkler heads, for instance, are fitted into the design just for easier maintenance.

3) Are manufacturer's specifications followed? The manufacturer knows much more about its own products than even the irrigation designer/contractor.

4) Would more heads with a more conservative design be more efficient? A poorly designed system will always cost you extra.

5) Are borders respected? Spraying over concrete and other borders just to reduce the number of heads in the design costs more money than proper design.

6) Are water shut-off devices and moisture sensors part of the design?

These devices will easily pay for themselves over a very short period of time, Hall says. Their installation cost is minor.



Hall: save 35-45% on water bills.

7) Have you calculated irrigation schedules? "A very conservative dollars savings amount that can be attributed to irrigation schedules is 35-45 percent of the monthly average water bill," Hall contends.

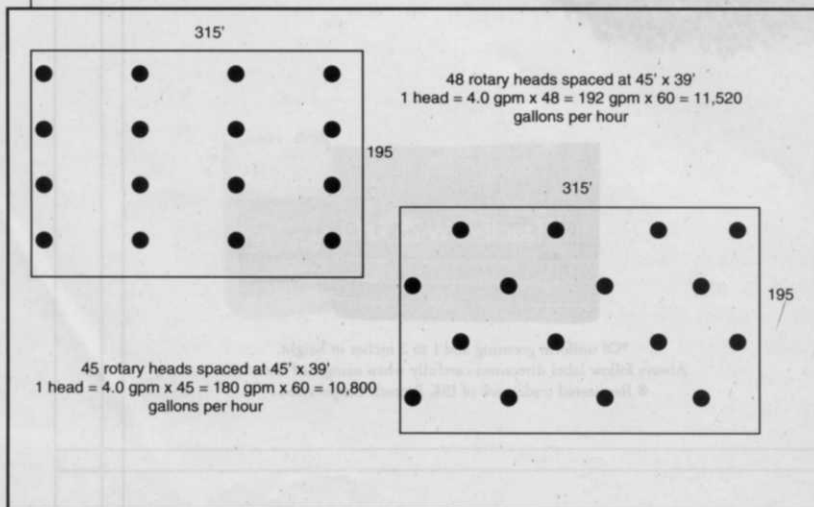
"It would take volumes to list all of the wrong things that are done. However, here are the biggest problems:

- Head placement that has been "guessed" or "eye-balled."
- Shrubbery zones mixed with turf zones.
- Spray heads mixed with rotary heads.
- Schedules that have not been calculated for the design; for instance, 30 minutes for rotors and 15 minutes for spray."

Water is a scarce and valuable resource. If you have any doubts as to the efficiency of your system, the money you spend now could result in multiple savings over the next few years.

Hall gave a presentation on "Designing for Irrigation Efficiency," from which this article is taken, at the Irrigation Association's annual International Exposition & Technical Conference in New Orleans late last year.

—Jerry Roche



Design Efficiency -VS- Operational Efficiency					
Note: Head Spacing and Pressure Constant @ 45' x 39' @ 40 PSI.					
Note: Data derived from Hunter Industries Profiles Software					
Style	Drain	Wettest	Precip. Rate	Sched. Coef.	
Square	.10	.34	.20	2.05	
Triangular	.12	.29	.20	1.64	
				.41	
Water Cost Value: .0046 per Gal. (Irrigate Rate; Water Only/No Sewage) 1					
Water Cost and Gallonage to Apply 6" of Water during the month of July 2					
Source: (1) City of Houston 10/27/92 (2) Texas Water Dev. Board					
Style	Hrs	GPH (Heads)	TTL Gal	Water \$	TTL Month \$
Square	42.3	11,520	487,296	.0046	\$2,241.56
Triangular	30.0	10,800	324	.0046	\$1,490.40
			163,296		\$ 751.16
This savings possible by designing the system to peak efficiency and utilizing industry available software. Additional savings possible due to correct irrigation scheduling.					

Turfcats' 4WD redefines upward mobility.

Ask About Our
PRIME PLUS
90 DAYS SAME AS CASH
See Your Dealer For Details



- On-demand 4WD system with differential lock delivers hill climbing power with less scuffing.
- High capacity, deep tunnel decks deliver both mowing quality and productivity.
 - 60" or 72" side or rear discharge rotaries.
 - 60" fine-cut flail.
- Front-mounted implements powered by efficient, hydraulic PTO Drive.
- Power steering reduces operator fatigue.
- Controls within easy reach.
- Choice of high-back suspension seats for all day comfort.

Introducing the new, 4WD Turfcats®

The 4WD Turfcats T422D climbs steep hills* with just a flip of a switch. For better side hill traction, a step on a pedal engages the differential lock.

Unlike some mechanical versions, the Turfcats' hydraulic drive system also maintains constant 4WD in turns. Tire slip is reduced to maintain quality turf without scuffing.

The Turfcats' wide track stance and low center of gravity provide superior stability going uphill or down.

A two speed transaxle lets you match the Turfcats' speed to your job. Low gear provides more torque to the cutting deck, while the hydrostatic drive lets you

change mowing speeds to match conditions. High gear provides faster transport speed between jobs.

Dependable hydraulic systems.

Best of all, the Turfcats gives you a new generation of reliability with our exclusive, hydraulic 4WD and hydraulic PTO. Systems that do away with a host of moving parts. The results are smoother operation and longer life with dramatically less maintenance.

Choose the Turfcats you need: a 22 HP diesel in 2WD or 4WD or a 36 HP gas engine in 2WD.

See your distributor today for a demonstration. Find out how you can improve your upward mobility.

JACOBSEN
TEXTRON

Jacobsen Division of Textron Inc.

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*Consult your operator's manual for safety instructions when mowing hills.

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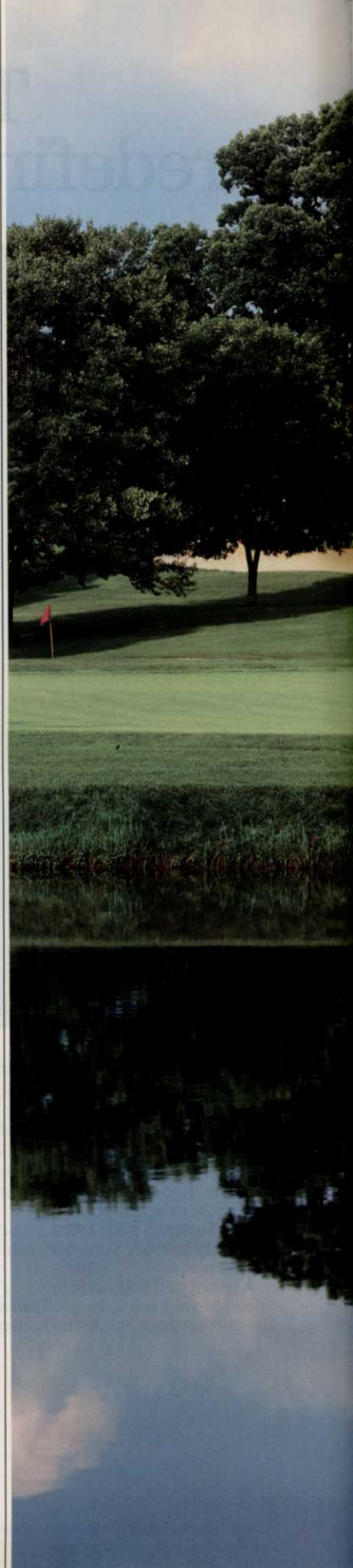
Today, nothing works faster than

19

Dylox. If you don't know why that's

93

important, we'll bring you up to speed.





DYLOX insecticide controls all species of white grubs in as little as 24 to 48 hours. It doesn't waste time. Then it doesn't hang around.

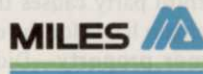
In these times, that's reason enough to use DYLOX. But there's more. It has no label restrictions on turf grass species or sites. So, you can spray your tees, greens and fairways for grubs, as well as cutworms and sod webworms. And with the DYLOX 80% formulation, you can also treat your flowers, shrubs and trees for armyworms, bagworms and stink bugs.



Add to that the fact that it's a low-odor compound available in 6.2% granular as well as 80% water soluble powder. Now you can understand why it is the fastest growing grub insecticide on the market.

For more information, contact Miles Inc., Specialty Products, Box 4913, Kansas City, MO 64120. (800) 842-8020.

The time is right for DYLOX.



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Circle No. 129 on Reader Inquiry Card

Risk, Risk, risk, risk, risk: how much are you taking?

Will you be reassured by this summary of insurance coverages? Or are there unknown gaps in your policy?

by Ed Wandtke

■ Do you really know how many risks you are taking? Some of you may not be insured for a risk, or assume you are insured for a risk.

Although many insurance agents do not know what coverage you really need because they are not experienced with green industry issues, they place you in an insurance package which covers most service or construction companies—often not the right coverage, but a good starting point.

Auto policy—Commercial automobile policies contain an exclusion (you are not covered) for accidents which result in damage to the environment caused by a pollutant. Pollutants you normally handle are fertilizer, herbicides, insecticides, plant growth regulators, or gasoline for power equipment use.

If you have an accident and one of these pollutants spills on the highway, you alone can be responsible for the clean-up. Even if a third party causes the accident, you may remain liable for the clean-up.

Customer property—Did you know that a standard general liability insurance policy covers you for damage to persons or properties adjacent to your customer's property, but not direct damage to your

customers or their property?

Some states have enacted laws requiring the "herbicide and pesticide" endorsement for green industry companies to protect customers and their property. However, many of you do not realize you don't have this coverage and have accepted the risk for any damage on a customer's property.

An experienced agent working with a lawn care or landscape company that is fertilizing the turf (liquid or dry, organic or standard), spraying trees or shrubs, or putting vegetation control in landscape beds, will have sold you the "herbicide and pesticide endorsement" coverage. This is available in the form of a supplemental endorsement to your policy that would provide coverage for damage to a customer or its property, subject to a small deductible.

Fire insurance—Many of you do not adequately protect your business in the event of a fire or other catastrophe. Many policies have a very low clean-up limit, and if you do not have a containment system in your building you may be exposing your business to a very high risk.

Our research has shown that the standard industry policies provide \$10,000 for site clean-up after a fire. Based on today's costs, if the water poured on the fire spread a few bags of fertilizer, a gallon of herbicide, or several gallons of petroleum-based products on the floor of the building, you could have clean-up costs ranging from \$10,000 to \$50,000, depending on the volume and amount of materials that have to be removed.

Business interruption—This coverage, which is most often overlooked,

assures you continuous income if your business should suffer an inability to operate. Those companies in Florida that had the coverage before Hurricane Andrew are in business today. The cost is very affordable, in light of the risk you are taking.

Extra expenses—Business interruption insurance is good to have. But in this industry, extra expense insurance is more important. This type of insurance provides coverage for expenses that are a result of a loss and not normal operating expenses.

For example, if you were to have a loss and you had to rent a truck to continue to meet production, this would be covered by extra expense insurance, but by business interruption only if there were a loss in profits.

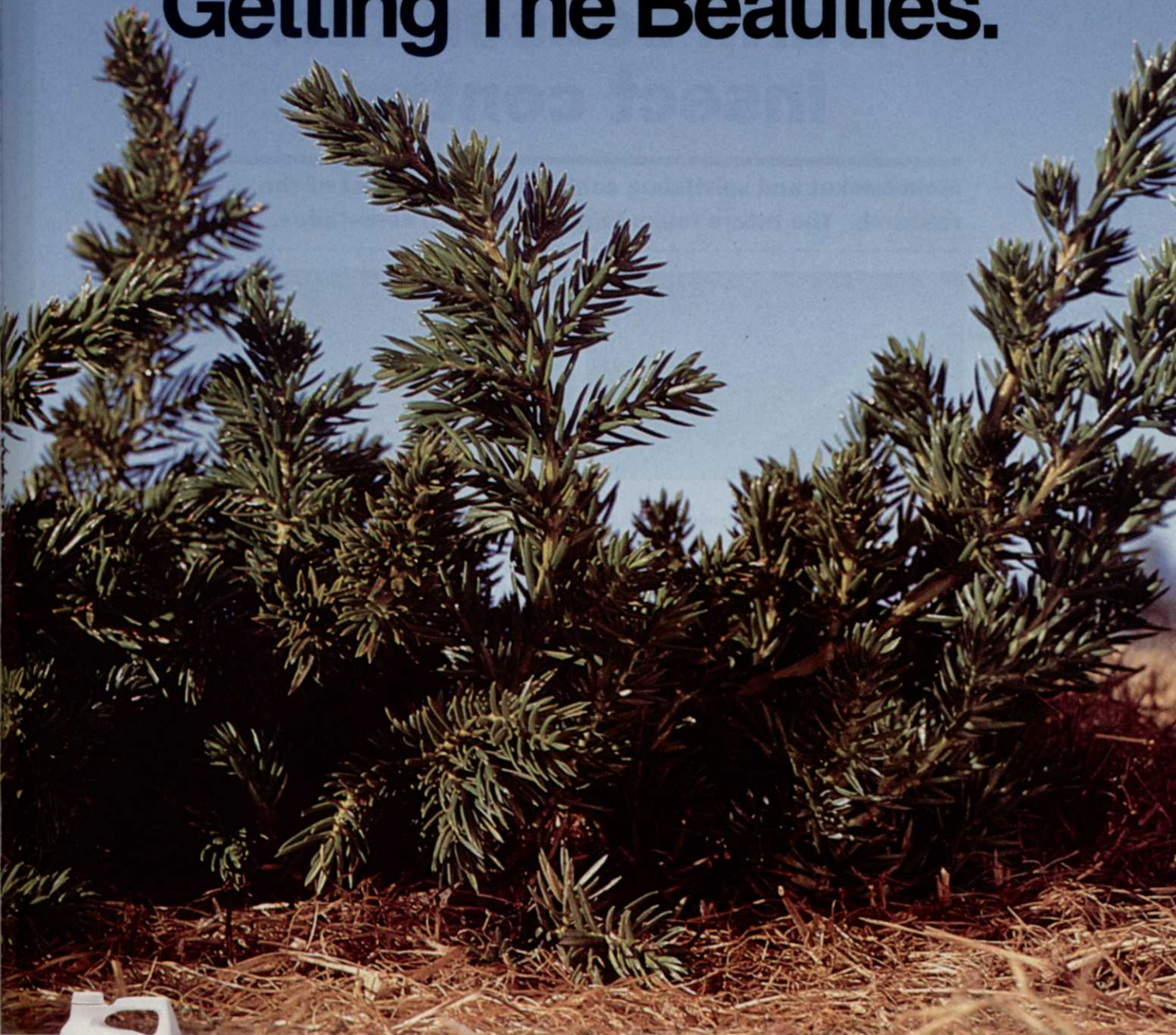
Key person—If one key person were lost to your company, would it go out of business? If the answer is yes, you need to purchase this type of coverage.

Insure for the replacement of the individual and the length of time it would take for a new individual to become as proficient as the person lost. Don't assume an individual needs to die for this coverage. Permanent health problems or incapacities can create a need. The survivability of your company will depend on having this insurance.

Key person insurance also avoids the issue of salary continuation being construed by the Internal Revenue Service as a dividend by the corporation to an owner of the company.

—Ed Wandtke is a principle in Wandtke & Associates, 2586 Oakstone Dr., Columbus, OH 43231. For further information about the items covered in this article, phone (614) 891-3111.

Vantage Gets The Beasts Without Getting The Beauties.



Your grass problem doesn't have to be a frightening story. Because Vantage™ herbicide selectively controls grass even among your most fragile ornamentals.

You can apply Vantage over the top during almost any stage of your growth, eliminating the need for costly and

time-consuming hand weeding. And with Vantage, there's no worry of leaching.

Use Vantage on your ornamentals, and you'll see how it'll bring your grass problem to a happy ending. If you have any questions, please call us at 1-800-878-8060.

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Always read and follow label directions.

Circle No. 110 on Reader Inquiry Card

Warm-season turf insect control

Mole cricket and spittlebug control is getting most of the research. The future looks bright, thanks to nematodes.

The adult two-lined spittlebug is best controlled in the adult stage, usually in June and August in Florida.

Photo by James Castner



Mole cricket control is improving, due to research with nematodes and sub-surface injection.

Photo by James Castner

by Don Short, Ph.D.

Managing turf insects in the South is a never-ending challenge. Mole crickets continue to be the most troublesome insect pest in Florida and several other southeastern states. Spittlebugs have been causing more concern during recent years, primarily in north and northwest Florida. Tropical sod webworms, chinch bugs and fire ants make their presence known yearly.

Mole crickets—The major thrust of turf insect research in Florida is biologically controlling mole crickets with the nematode *Steinernema scapterisci* and the red-eyed Brazilian fly *Ormia depleta*. These natural enemies of mole crickets, imported from South America, are specific parasites of mole crickets and harmless to non-target organisms. The nematodes cause death by bacterial poisoning, the fly by depositing live maggots on or near the mole crickets.

Efforts with these two parasites seem to be paying off. The red-eyed fly, released in 1988, has spread to 30 Florida counties. The nematode now populates 13 Florida counties. Fifty-three percent of golf course super-

intendents in south Florida counties reported in 1991 either the same or less mole cricket damage than in previous years. None reported more mole cricket activity.

Cultural practices—Cultural practices can greatly influence the susceptibility of turfgrasses to insects and related pests. Here are some tips:

1) Do not over-apply water-soluble inorganic nitrogen fertilizers. They force rapid succulent growth that acts as an attractant and substantially increases the chances of insect attack. Pest damage, especially from chinch bugs and sod webworms, can be greatly reduced by using slow-release nitrogen fertilizers in combination with other nutrients.

2) Mow, water and fertilize properly to prevent thatch, which is an excellent habitat for chinch bugs and turf caterpillars and chemically ties up insecticides, thus reducing their effectiveness.

Proper mowing can make the grass more tolerant to pests and greatly reduce thatch build-up. Proper mowing heights:

St. Augustinegrass..... 3 to 3-1/2 inches
St. Augustine (shaded)..... 4 inches

centipede grass..... 1-1/2 to 2 inches
common bermudagrass..... 1/2 to 2 inches
hybrid bermudagrass..... 1/4 to 3/4 inch
bahia grass..... 3 to 4 inches

Sharpen the mower blade frequently. To minimize stress on the grass and reduce thatch problems, mow often enough so that no more than one-third of the grass blade is removed at each mowing.

3) Do not routinely collect clippings. The only two instances when they should be removed: to prevent the spread of a disease or weed problem, and when the grass has grown excessively tall. Never mow when the grass is wet since this can disperse disease.

4) Do not irrigate until the grass begins to wilt or turns a blue-green color, or footprints on the grass remain compressed for more than a few seconds. Irrigate with 3/4 to 1 inch of water and do not irrigate again until the above symptoms reappear. This encourages a deep, vigorous root system.

Soil injection—Injection or sub-surface placement of both liquid and granular insecticides, is becoming more popular for control

continued on page 47

INSIDE

Cool-season insect control: grubs might be a problem, p. 50

Soil preparation essential when sodding or seeding, p. 56

SCOTTS® Pendimethalin

No one can
offer you a
more effective
preemergent
weed control.



And here are 7 reasons why:

1. Broad Spectrum Control - Prevents sprouting of six annual grassy weeds and nine annual dicot weeds.

2. Control Effectiveness - No other single pre-emergent herbicide controls so many weeds so well.

3. Season-Long Control - Pendimethalin's unique chemical properties allow for maximum performance season long.

4. Application Flexibility - Pendimethalin gives you more flexibility in programming preemergent applications.

5. Scott Formulation Advantage - Scott's smaller, uniformly sized particles provide better coverage with fewer application breaks and more effective control.

6. Turf Safety - When used as directed on a variety of cool and warm season turf grasses.

7. Formulation Flexibility - Your Scott Tech Rep is ready to help you select the right formulations to best meet your preemergent program needs.

No other broad spec

Control Effectiveness

Since 1984, SCOTTS® pendimethalin preemergent control products have provided the toughest, most cost-effective control of a broad spectrum of grassy and broadleaf weeds.

When selecting a preemergent herbicide, it is important to understand all the performance capabilities and limitations of the products you are considering. Season-long crabgrass control is only one aspect of a comprehensive weed control program, and pendimethalin provides it. But pendimethalin also offers performance advantages over other preemergent weed control products, advantages that will favorably impact your total turfgrass management program.

Broad Spectrum Control

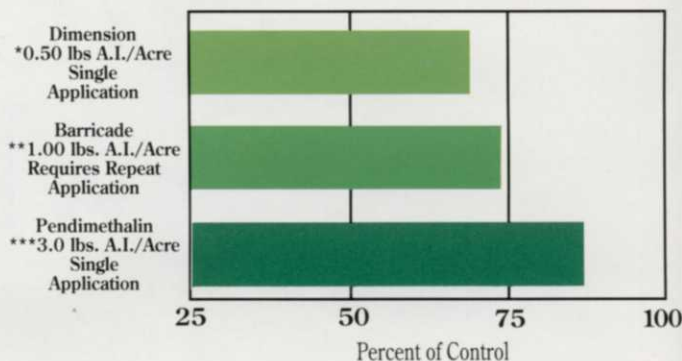
Pendimethalin effectively prevents sprouting of six annual grassy weeds and nine annual dicot weeds. No other single preemergent turf herbicide can match pendimethalin's broad spectrum control of these important weeds.



OXALIS • CUDWEED
PROSTRATE SPURGE
PURSLANE • ANOPIWEED
HOP CLOVER
EVENINGPRIMROSE
CHICKWEED • HENBIT
GOOSEGRASS • POA ANNUA
CRABGRASS • BARNYARDGRASS
FALL PANICUM • FOXTAIL

Your choice of a preemergent herbicide will impact other aspects of your weed control program. An effective preemergent will provide a high level of control on a wide variety of grassy and broadleaf weeds resulting in fewer costly and time consuming postemergent herbicide applications during the season. Pendimethalin provides superior performance on troublesome weeds such as goosegrass and oxalis.

Goosegrass Control Comparison



* The maximum label rate of 0.50 lbs. A.I./Acre/Year will only provide suppression of goosegrass in the South. Dimension is a trademark of Monsanto Company.

** Repeat applications are required to control goosegrass. Product was applied at 0.75 lbs. A.I./Acre with a repeat application at 0.25 lbs. A.I./Acre. Barricade is a trademark of Sandoz Limited.

*** In the South, pendimethalin may be applied as a single 3.0 lb A.I./Acre application or as two 1.50 lb A.I./Acre applications for the control of goosegrass.

Preemergent Co

	Crab-grass	Goose-grass
Dimension	H	M
Barricade	H	M
Pendimethalin	H	H

H = High level of control
(Based on Scotts)

er preemergent can match ctrum control, season-long

Season-Long Control

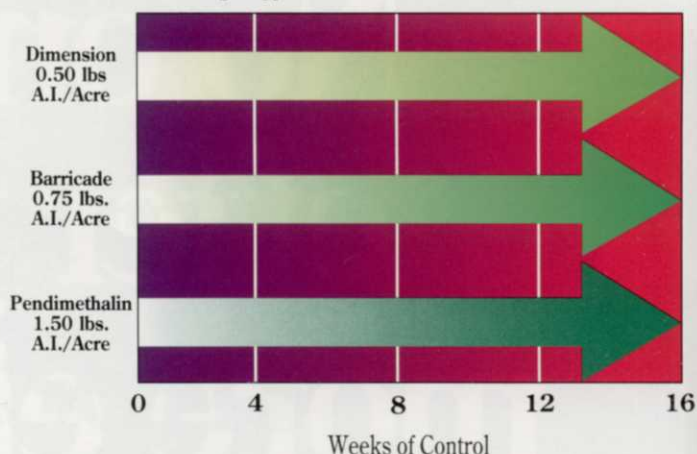
One of the major strengths of pendimethalin is its ability to provide season-long preemergent weed control. In cool season turf areas pendimethalin provides early control of crabgrass, season-long with a single, properly timed application.

In warm season turf areas where weed pressure is generally more severe, pendimethalin allows preemergent control of crabgrass, goosegrass and other troublesome weeds with a single, properly timed application.

Pendimethalin's favorable chemical properties allow for maximum performance in these critical areas:

- Ability to move into the zone of weed seed germination and maintain a viable barrier.
- Stability on the soil surface to minimize loss following application.
- Sufficient soil longevity to provide effective residual weed control.

Season-Long Crabgrass Control Comparison
Single Application/Weeks of 90+% Control



Approved label directions and allowable rates are based on extensive testing to assure responsible use of control products. Pendimethalin's label offers an important advantage in this area by allowing the turf manager to choose from a wide range of product rates and application timing choices.

Pendimethalin compares well to Dimension and Barricade in the following key areas:

Unlike Dimension:

1. Pendimethalin can be applied as a split- or single-rate application for crabgrass control in the North and/or as a split- or single-rate application for crabgrass and goosegrass control in the South.
2. Pendimethalin outperforms Dimension on the control of goosegrass. Dimension is labeled for goosegrass suppression only in the South.

Unlike Barricade:

1. Pendimethalin can be applied as a single- or split-rate application in the South for control of both crabgrass and goosegrass.
2. Pendimethalin provides excellent control of goosegrass with a single application.

Control Comparison

	Foxtail	Poa Annua	Oxalis	Spurge
	H	M	H	M
	H	M	M-H	M
	H	M	H	M

M = Medium level of control

(TORTS/university data)

pendimethalin's combination performance and proven t

Application Flexibility

Repeat
Applications
Allowed By Label

Single Application
Control Effectiveness

Crabgrass	Goosegrass (South)
-----------	--------------------

Dimension
Barricade
Pendimethalin

NO
YES
YES

YES
YES
YES

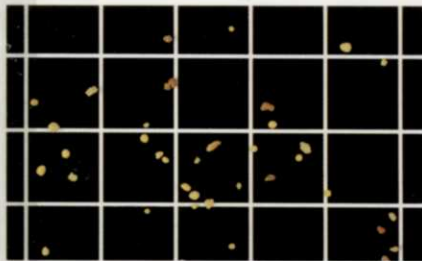
NO
NO
YES

Scott Formulation Advantage

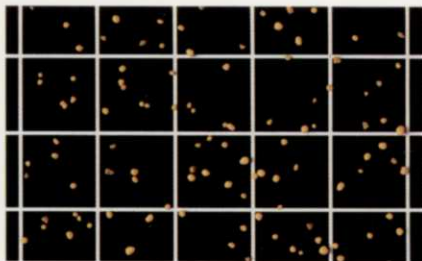
Pendimethalin particles are smaller and more consistently sized than typical competitive physical blends, reducing segregation potential while providing up to 3 times the coverage with SCOTTS Poly-S™/pendimethalin product and up to 8 times the coverage per square inch with Scotts Triaform™/pendimethalin product.

Note the improved particle distribution pattern achieved with SCOTTS fine-particle Triaform/pendimethalin fertilizer and Scotts Poly-S/pendimeth-

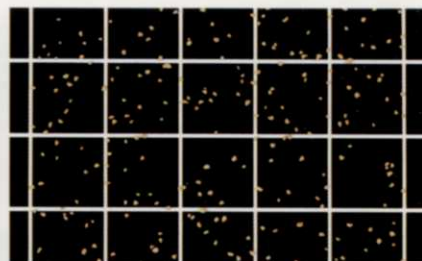
alin fertilizer products. Such distribution means the active ingredient is more evenly distributed over the soil surface for more consistent control and fewer application breaks. Uniformly sized particles reduce segregation potential and improve spreadability. Field tests show that poorly formulated combination products may sacrifice preemergent weed control by up to 15% or more. (Each square in the graph below represents a 1-inch square area.)



Typical Large-Particle Blended Product



SCOTTS Poly-S/Pendimethalin



SCOTTS Triaform/Pendimethalin



Typical Large-Particle Blended Product



SCOTTS Poly-S/Pendimethalin



SCOTTS Triaform/Pendimethalin

Uniformly sized particles reduce segregation potential and improve spreadability. Poorly formulated combination products may sacrifice weed control by up to 15% or more.

tion of urf safety.

Turf Safety

When used as directed, pendimethalin products have proven to be safe on a variety of cool and warm season grasses, including:

Cool Season Grasses	Warm Season Grasses
Kentucky Bluegrass	Bermudagrass
Perennial Ryegrass	Zoysiagrass
Fine Fescue	Bahiagrass
Tall Fescue	St. Augustinegrass
Creeping Bentgrass*	Centipedegrass

* For use on Creeping Bentgrass maintained at 1/2" or taller.

Root Effects and Turf Quality/Density

Research studies conducted since 1984 show that pendimethalin, when used according to label directions, does not reduce root growth on cool and warm season grasses compared to other preemergent herbicides. And university studies have shown that turf quality, turf density and sod strength are equal to or better than other preemergent herbicides tested. Turfgrasses show excellent tolerance to applications of pendimethalin even at the higher labeled rates (3.0 lbs. A.I./Acre).

Seeding/Reseeding

The practice of seeding cool season grasses is an integral component of almost every turf manager's program. In the North, seeding may be done to renovate worn tee boxes or to increase turf density on fairways, roughs or lawns. In the South, ryegrass overseeding is

a common practice used to enhance the winter appearance and playability of golf courses and other turf areas. When selecting a preemergent herbicide, it is important to understand the effect that the herbicide residual may have on your seeding/overseeding program.

Product	Rate (Lbs. A.I./Acre)	Seeding Interval (Months)	
		Drill	Broadcast
Dimension	0.50	3*	3*
Barricade	0.33-0.50	3-4**	4-6**
Barricade	0.50-1.00	6-8**	8-12**
Barricade	1.00-1.50	9-12**	12-18**
Pendimethalin	3.0	4***	4***

* Label states that seeding within three months of application may inhibit establishment of desirable turfgrass.

** From RegalKade 37 label directions. RegalKade is a product of Regal Chemical Company.

*** Label states to delay seeding four months following application.

NOTE: Barricade 65WG label states: Do not apply to spring seeded turf or newly set sod until the following year.

Pendimethalin's favorable combination of chemical and physical properties allows for season-long weed control and yet still offers the flexibility for safe, successful seeding/overseeding programs.

For more information about SCOTTS pendimethalin products, contact your Scott Tech Rep. Or call 1-800-543-0006.



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TREATING WARM-SEASON TURF FOR INSECTS

PEST	SUGGESTED PESTICIDE	TIMING	APPLICATION
Mole Crickets	Crusade 5G Mocap 10G* Oftanol 2 Oftanol 5G Orthene turf, tree and ornamental spray Pageant DF Triumph 4E*** Turcam 2.5G Dursban bait	In large turf areas, map and make note of tunnelling (egg-laying) activity during spring months for treatment after nymphs hatch. Middle to late June after most nymphs have hatched and are still small is the optimum time for pesticide application. Spring treatment is optional. Orthene may reduce adult tunnelling somewhat. It is more important to keep damaged areas packed down and grass roots in contact with the soil. Irrigate and fertilize as recommended for grass variety.	Irrigate before treatment if turf is not moist. Treat as late in the afternoon as is practical. Follow label for post-treatment irrigation directions.
Sod webworms	<i>Bacillus thuringiensis</i> Crusade 5G Diazinon 4E** Dursban Pageant DF Proxol Orthene Tempo 2 Triumph 4E*** Turcam	In Florida, the major species is the tropical sod webworm. Populations usually do not build up until June in south Florida, July in central, and August in north Florida.	Delay mowing and irrigation for 24 hours after treatment.
Spittlebugs	Diazinon 4E** Dursban	Control is usually more successful when most of the population is in the adult stage. Usually June and August in Florida. Damage usually begins in shaded areas.	Mow and dispose of clippings before applying a pesticide. Irrigation several hours before treatment will improve control.
Chinch bugs	Crusade 5G Diazinon 4E** Dursban Oftanol Orthene Pageant DF Tempo 2 Triumph 4E***	Replace turf with resistant variety. More of a problem in dry weather. Monitor St. Augustinegrass weekly, concentrating on sunny areas. Treat when damage begins to appear.	Apply additional spray volume if thatch is present. In limited experiments, granules appear to be more effective in heavily-thatched turf.
Grubs	Crusade 5G Diazinon 4E** Proxol Mocap 10G* Oftanol Sevin Triumph 4E*** Turcam 2.5G	Early June is probably the optimum time for most species.	Keep the soil moist for several days before treatment to encourage the grubs to come close to the soil surface. Apply as late in the p.m. as possible and irrigate before the insecticide dries on the grass blades.
Billbugs	Crusade 5G Diazinon 4E** Proxol Mocal 10G* Oftanol Sevin Triumph 4E*** Turcam 2.5G	Most effective control is obtained in late spring or early summer.	Same as for grubs.
Ground pearls	None have been found to be effective.	When approved fertilization, irrigation, mowing and nematode management practices are followed, grass will usually not be obviously affected.	
Fire ants	Amdro bait Logic bait Dursban Orthene	Treat only when soil surface temperatures are between 60-80 degrees F. Do not apply during the heat of the day.	Irrigate before application. Use one bait and follow with Dursban or Orthene in 5-7 days. Be sure baits are fresh.

*Mocap 10G is labelled for commercial turf only (golf courses, sod farms).

**Diazinon is not labeled for use on golf courses or sod farms.

***Triumph 4E is restricted to certain soil types and several application techniques must be followed. It is labeled for use on lawns, sod farms and golf courses (only tees, greens and aprons). A maximum of one application per year is permitted for the higher surface insect rate and a maximum of two applications per year at least 60 days apart for the lower surface insect rate.

Source: Dr. Don Short

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Always read and follow label instructions before applying any herbicide product. PRE-M[®] is a registered trademark of LESCO, Inc.

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Warm Insect from page 34

of mole crickets, other soil insects and nematodes in large turf areas.

The benefits are obvious: (1) lower rates; (2) reduced risk to human and animal exposure; (3) less odor; (4) reduced run-off and drift; (5) minimal ultra-violet degradation; (6) less pesticide bound up in thatch; (7) greater exposure to the pests; and (8) longer residual activity.

Liquids are injected at up to 2,000 psi, depending on soil type, as pesticides are forced 1/8 to 1-1/2 inches into the soil. In Florida, we conducted mole cricket field tests on golf courses, injecting at 1,200 psi and getting 1/2- to 3/4-inch penetration on bermudagrass fairways.

Excellent results were obtained with Dursban at 2 lbs. Ai/A compared to poor control at higher rates when surface-applied with a conventional boom sprayer.

On home lawns, we have experimented with the Nemajet, a hand-held injection device that was used several years ago to inject nematocides. Excellent mole cricket control was obtained with only 100 to 150 psi at the nozzle. It is somewhat more time-consuming than a hand gun, but control is much better and the same benefits are realized as with the larger machines. Landscape managers should seriously consider this method of application on small turf areas for control of mole crickets, grubs and billbugs.

Probably the most common equipment for sub-surface granular application on large turf areas is the Dol Overseeder, originally developed for seeding small grain and grass. The seeder puts the insecticide 1/2-inch below the soil surface where the mole crickets are active. There is no dust, and little—if any—odor. Several insecticides now include label directions for sub-surface applications, including Dursban, Turcam and Mocap.

—The author is professor and extension entomologist for the Department of Entomology and Nematology, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Fla.

New insecticides

■ At least two new insecticides are hitting your distributor's shelves this year: Merit from Miles, Inc., and Mainstay 2G from Lesco, Inc.

Merit (test code NTN-33893) features totally new chemistry, according to Jim Dotson, Miles' turf and ornamental research product manager. Its common name is imidacloprid, a member of the chloronicotinyl group of chemicals. Merit, which will carry a label for soil insects, has shown to be very effective against white grub species. According to Dotson, it may also have "outstanding potential for mole cricket control."

When Merit's label becomes EPA approved, it will be available on a limited basis.

Mainstay is a 2% formulation of fonofos, which is also the active ingredient in Crusade. It is labelled for use on mole crickets, grubs, chinch bugs, billbugs, sod webworms, fire ants and other turf pests. Lesco is now taking orders for Mainstay.

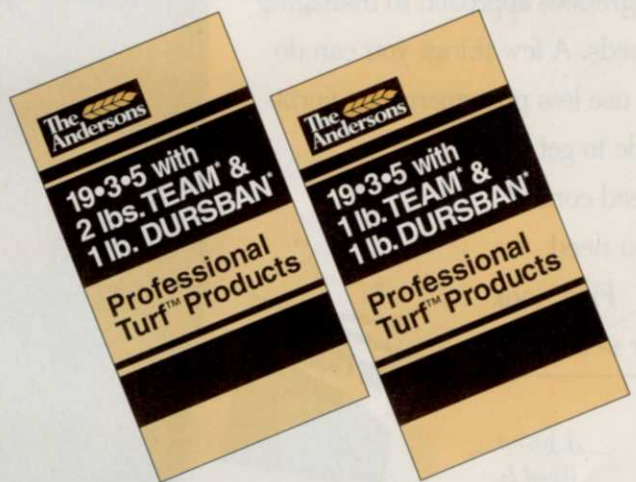
New formulations of other insecticides include a Dylox 6.2 from Miles and a dry flowable (DF) formulation of DowElanco's Pageant.

—Jerry Roche

Q: We've got good news for turf, bad news for bugs and worse news for weeds. Which would you like first?

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A: How about all three at the same time?



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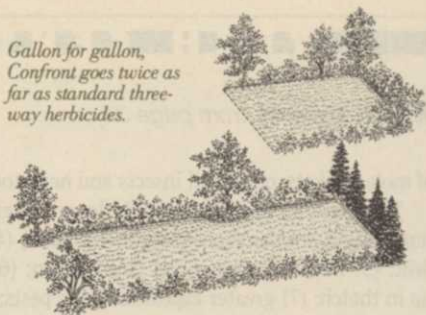
The thing we're trying to help you avoid is overkill. Because if you can control weeds, isn't that enough?

So here's a less

EPA), and you'll get very good results. It sounds simple, but it's one of the most effective ways to use less herbicide.

Also, calibrate your equipment frequently, and use the correct

Gallon for gallon, Confront goes twice as far as standard three-way herbicides.



At last. A herbicide as like eradicate, eliminate

aggressive approach to managing weeds. A few things you can do to use less postemergence herbicide to get the weed control you need.

First, look for weedy areas

A Young
Weed Is
A Vulnerable
Weed.

The best time to apply your postemergence herbicide is early—when you first see weeds emerge. This is when weeds are the most vulnerable to herbicides. You'll get better results from your application, and you'll reduce the need for treating hardened weeds later.

before applying herbicide. That way, you can use spot treatments instead of broadcast applications (a practice recommended by the



 DowElanco

rate of herbicide for the weed you want to control. You'll get better results from your application, and reduce the chances you'll have to re-apply.

And it's important to select a

postemergence herbicide that does the job the first time you apply it. For stubborn broadleaf weeds,

Careful scouting helps you get effective weed control using less herbicide.



herbicides often miss, giving you excellent results from your application. Confront® herbicide is also a good choice. Confront gets to the roots to keep weeds from coming back. It's very effective on

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Turflon® herbicide is a good choice. It controls weeds other

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Cool-season turf insect control

The wet summer of '92 suppressed much pest activity. But a normal weather pattern in July and August this year will bring the grubs back.



Billbug adult populations are reduced by *Beauvaria* spp., an entomopathogenic fungus.



The entomopathogenic fungus *Beauvaria*, was also effective against chinch bugs in the summer of 1992.

by Harry Niemczyk, Ph.D.

■ The summer of 1992 in the North Central states was the coolest, cloudiest, and—in some areas—the wettest on record. These weather factors had a major influence on suppressing damage from chinch bugs, billbugs and grubs.

The entomopathogenic fungus *Beauvaria*, which is especially ineffective under moist conditions, killed many chinch bugs. The cool temperatures and cloudy skies of July created a less-than-optimal condition for Japanese beetles to lay their eggs. Some egg laying did occur later in the summer, and caused infestations to appear in late September and October. In general, however, grub infestations and damage was down from previous years.

What effect will this have on damage potentials for 1993? If we have a normal summer, especially during July and August, do not expect much relief from grubs. Billbugs are ever present. Chinch bugs may be slow to recover after 1992, but keep in mind they have two generations each year to recover in most of the cool-season region.

What's new—Interest in and consumer demand for non-chemical controls

for insects remains high. While field evaluation of various agents continues, the results are not exactly "exciting." It is unlikely that any single agent will control damage from turfgrass insect pests as well as chemical insecticides do. It is more likely that their role, either singly or collectively, will be to act as suppressing agents to hold population levels below a threshold which would require the use of insecticides.

Insecticides: Miles, Inc. (formerly Mobay), has applied for conditional registration of a new insecticide, Merit (imidacloprid), a new, low-toxic, broad spectrum, systemic insecticide for control of grubs and some sucking insects. The results of field evaluations over the past three years have shown this material to be very effective against a broad range of grub species. If full registration is obtained as expected in the first half of 1993, full-scale marketing is expected in 1994.

O.M. Scott & Sons has announced registration of Turplex bio-insecticide to be sold to golf and other selected professional markets for control of cutworm, armyworm and sod webworm in turfgrasses. The active ingredient, azadirachtin, interferes with the normal development of the

insect (insect growth regulator—IGR) and is extracted from the seed of the neem tree, which originated in India and Burma. Test results at Ohio State University and other locations have shown that target pests die in three to 15 days after application, but that feeding usually ceases before mortality occurs.

IPM the one constant: Knowledge about the lifecycle of pests in any specific area and determining the need for treatment based on evaluation of populations at vulnerable periods during the insect's lifecycle, remains the key to successful control. The concept of IPM—intelligent plant management—depends upon this principle.

Seasonal occurrences of some of the cool-season insect pests in this region and some of the insecticides that may be effective in reducing damage from them are listed on page 52. No endorsement of products is intended, nor is criticism implied of those not mentioned here.

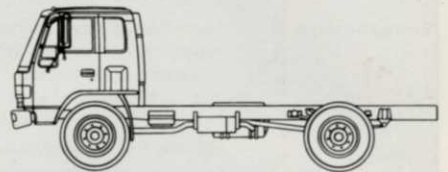
—Dr. Niemczyk is Professor Emeritus and Turfgrass Insect Research Coordinator at The Ohio State University's Agricultural Research & Development Center in Wooster, Ohio.

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Cool-season insect control strategies

Pest	Spring April-May	Summer June-August	Fall-early winter Sept.-December
Chinch bugs	When summer damage expected, preventive application of liquid or granular Dursban (1 lb. ai/A); Triumph ¹ (1 lb. ai/A) may be used as soon as bugs are active. Complete applications of insecticides by first week in May.	Treat before severe injury with Dursban (1 lb. ai/A); diazinon ^{**} (2.5-5.5 lbs. ai/A); Crusade ² (3-4 lb. ai/A) or other labeled insecticides.	Treat if needed. Generally, infestation not high enough to warrant insecticides.
Billbugs	Same as for chinch bugs.	Treat at grub rates with Triumph ¹ , diazinon ^{**} , Turcam, Mocap or Sevimol. App. in mid-late June most effective. Irrigate following application.	Treatment usually not appropriate at this time.
Sod webworms	Overwintered larvae can cause damage in April or May. When necessary, apply diazinon ^{**} (5 lb. ai/A); Triumph ¹ (1 lb. ai/A); Dylox or Proxol (6-8 lb. ai/A). Crusade ² (3-4 lbs. ai/A) Use flush of water/liquid detergent to scout for infestation level.	Apply when damage is seen, or larvae are present. Use Dursban (1 lb. ai/A), Triumph ¹ (1 lb. ai/A) diazinon ^{**} (5 lbs. ai/A); Sevin-Sevimol (6-8 lbs. ai/A); Proxol-Dylox (6-8 lbs. ai/A); Crusade ² (3-4 lbs. ai/A) or other labeled products.	Larvae cause little damage at this time. Treat in Sept. to reduce spring population.
Cutworms	Use insecticides that are effective against sod webworms. Apply late in the afternoon. Do not irrigate after liquid applications. Irrigate granular applications.	Use Orthene (1-3 lbs. ai/A); Dursban (1 lb. ai/A); Triumph ¹ (1 lb. ai/A); Proxol-Dylox (8 lbs. ai/A); Crusade ² (3-4 lbs. ai/A) Do not irrigate after liquid applications. Irrigate granular applications.	Same as for summer.
Greenbug aphid	Aphid numbers too low to detect.	Orthene (1 lb. ai/A); Dursban (1 lb. ai/A); diazinon ^{**} (2.5 lbs. ai/A)	Severe infestations may occur as late as Dec. Use same insecticides as in summer.
Grain mites	If treatment is needed, use liquid diazinon ^{**} (2-3 lbs. ai/A) or Dursban (1 lb. ai/A). Avoid repeated use of Sevin-Sevimol.	If needed, use spring treatment.	If infestations develop in December, use summer treatment.
Grubs	If treatment of overwintered grubs is needed, apply when all grubs are in the first two inches of surface soil. General or spot treatment with Triumph ¹ (2 lbs. ai/A); Oftanol, Sevin-Sevimol or Mocap (5 lbs. ai/A) or Turcam (2-4 lbs. ai/A) may be used. Crusade ² (4 lbs. ai/A). Irrigate as soon as possible after application. Green June beetle larvae are difficult to control at this time. Sevimol (2-4 lbs. ai/A) may be effective.	Existing grubs found in July or August may be treated with Triumph ¹ , Dylox, Proxol, Turcam, Oftanol, Sevin-Sevimol or Mocap. Apply at label rates. Crusade ² 4 lbs. ai/A. If soil and/or thatch is dry, irrigate thoroughly before and as soon as possible after app. Treat green June beetle with Sevin (2-4 lbs. ai/A)	Treatment can be made as late as mid-late Sept. as long as grubs stay in first inch of surface soil. Triumph ¹ , Mocap, Dylox-Proxol at label rates may be effective
Black turfgrass ateniaus	Dursban (1-2 lbs. ai/A) applied to fairways in April for control of overwintered, egg-laying adults, reduces potential for summer larval infestations. Retreatment after two weeks will provide best control.	If preventive applications were not made, spot or generally treat with Triumph ¹ (2 lbs. ai/A); Proxol Dylox (8 lbs. ai/A); Turcam (2-4 lbs. ai/A); Crusade ² (4 lbs. ai/A); or Mocap (5 lbs. ai/A) as needed.	Undeveloped larvae die with development of ground frost.

¹ For use only by commercial lawn pest control personnel, and only on golf course tees, greens and aprons, and on sod farms. See soil restrictions.

² For use in professional turf areas such as golf courses and commercial sod.

** Diazinon may not be used on golf courses of sod farms.

Source: Dr. Niemczyk

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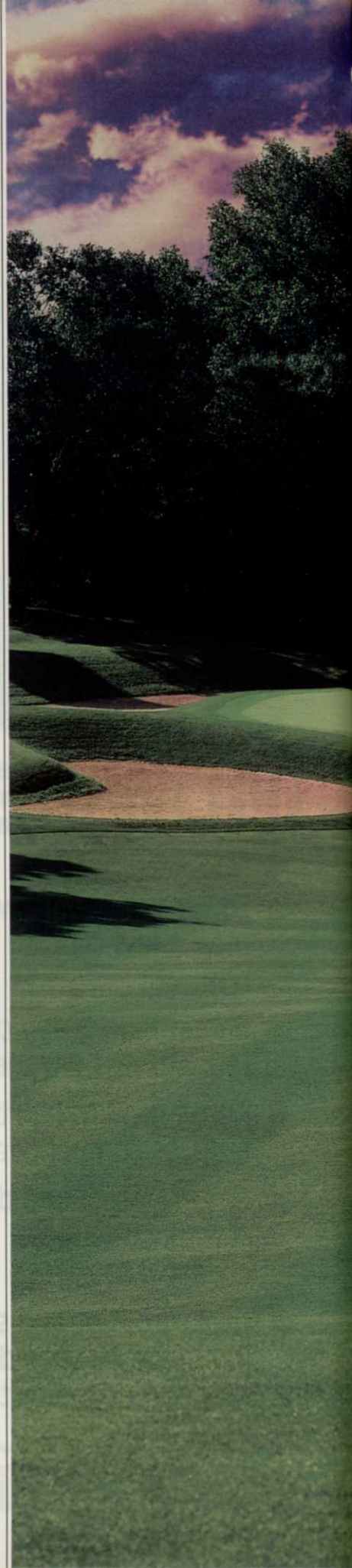
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It may be the most consistently rewarding choice you make.



Sodding vs. seeding: what's the best bet?

by Ronald C. Smith, Ph.D.

■ A healthy stand of turfgrass controls soil erosion, reduced dust, controls soil temperature, recharges groundwater, and reduces noise levels. In addition, it simply looks great, setting off a well-designed and installed landscape planting.

The four ways in which turfgrass is established are: seeding, sprigging, stolozing and sodding. But no matter how you intend to establish turfgrass, proper soil preparation goes a long way to assuring success (see sidebar).

Seeding—To establish by seeding, here are some helpful hints:

● **Buy quality seed.** Purchase seed based on purity (the percentage of pure seed of the species being planted) and germination (the percentage of that species that can be expected to germinate). The higher these percentages are, the better; and the lower the "inert matter," "weed seed" and "other crop" that shows up on the label, the better. This is not the place to cut corners.

● **Apply the seed at the proper rate** for the species: Kentucky bluegrass at 1 lb./1000 sq.ft.; tall fescue or perennial ryegrass at 7 lbs./1000 sq.ft.; fine fescues at

3.5 lbs./1000sq.ft. In the contracting business, the tendency is to go heavier when in doubt, pushing the seed count to 25 to 30 seeds per square inch. This results in an excellent flush of dense growth, but creates problems with maturation of the stand, leading to possible die-out from diseases.

The methods of seed application vary widely—from a simple drop spreader, to a cultipacker, or to a hydroseeder (see chart).

Sodding—All four types of sod—mineral or upland grown sod, peat sod, washed sod, and biosod—result in an "instant lawn" which provides immediate soil stabilization.

Sodded turfs, like those that are being established from seed, need irrigation for successful establishment. With mature, properly harvested and handled sod, less overall water is needed than the seeded sites. This requires controller adjustments on the part of the contractor, or educational efforts directed at the property owner, to reduce watering frequency once the sod has rooted in.

Sod that is originally weed-free is a commonplace expectation from quality sod growers, thanks to good management practices and intelligent use of herbicides

Smith: Buy seed based on purity, germination



on their part. This virtual elimination of weeds for at least a year, if not indefinitely, is in stark contrast to the landowner needing repeat applications of herbicides for anywhere from one to three years before satisfactory control is achieved.

The professional sod grower has the seeding rate down to a science, resulting in a quickly matured sod that efficiently uses fertilizer and water, competitively crowds out many weeds, and has essentially no disease problems.

Modern sod harvesting equipment carefully cuts at a uniform thickness—as thin as possible to allow for quicker establishment—so the end user has a smooth, finished surface, even before rooting takes place.

Growers like Harley's Sod of North Branch, Minn., track results from turfgrass researchers at regional universities. This allows them to continually improve their seed blends and mixes, selecting grass cultivars that have proven to have the most enduring qualities for their

Preparing the seedbed

■ Since the landscape contractor often inherits a property where construction rubble is buried a couple of inches below the soil surface, here are the proper steps in soil preparation:

1) Deep till any compacted soil or, if the soil is too heavy, use a chisel plow. Follow this with a rough disking or harrowing, leaving the surface rough to allow for a more gradual transition between the topsoil and subsoil. This rough grading establishes the surface drainage patterns for the turf's final grade.

2) Uniformly spread topsoil over the subsoil at a depth of four to six inches—the deeper the better.

To figure out how much topsoil is needed for an area, calculate it on the basis of about 3.5 cu.yds. needed for every 1000 sq.ft. and 1 inch of depth. For example, a 10,000 sq.ft. area, requiring topsoil six inches deep would need about 210 cu.yds. of soil ($3.5 \times 10 \times 6 = 210$).

3) Check the topsoil for pH, phosphorus, potassium and organic matter content. If organic matter is not 3 percent or more, add some in the form of peat or humus, to bring it to between 3 and 5 percent.

4) Remove any rhizomes that may be visible as the topsoil is being graded. These could be the residue of quackgrass

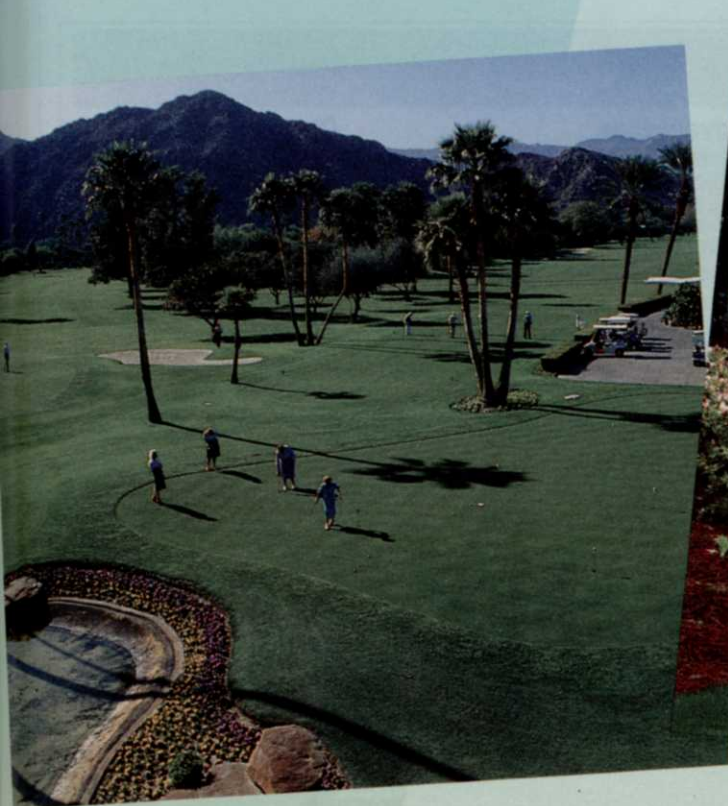
or Canadian thistle and could cause a considerable problem in trying to get a quality turf established. Certainly, any rock or debris should be removed as well. The final surface should be firm, granular and slightly moist to assure good contact between the applied seed or sod.

5) Work in any necessary fertilizer materials, based on soil test results.

It has all too often been noted that this phase of turf establishment is an effort to save money or to win the bid. Suffice it to say that cutting corners here will simply result in compounded problems later.

—R.C.S.

The (not-so) secret of a gorgeous lawn is Oregon-grown Ryegrass



Search the world over and you'll not find another variety with all the qualities of Oregon-grown Ryegrass.

It's the turf grass that will normally germinate in 7-10 days, show excellent disease-resistance, stand up to heavy hard use, respond rapidly to fertilization and mow beautifully at heights ranging from $\frac{3}{16}$ to $1\frac{1}{2}$ inches.

Ryegrass is available at lawn & garden stores, nurseries and seed dealers as either a utility grass or one that will produce "show quality" turf.

Thoroughbreds of the Ryegrass family are the dark green, fine-bladed turf-type perennials which are marketed under a variety of names. They often form the turf at golf courses and other areas where premium turf is a must.

If you prefer less "showy" turf, the choice may well be Linn Perennial Ryegrass. By comparison with the turf-type Ryegrasses, it exhibits bright green color and has a slightly broader blade.

However, it too will usually germinate in a week or more, is disease-resistant, durable and will quickly develop an extensive root system.

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Slit-seeding results in minimum soil disturbance, greatly reducing potential for off-site pollution and weed problems.

after installation, the watering frequency should be reduced to match the weather conditions and site exposure. This generally

means that most sodded turf areas can

look pretty good on about 1 to 1-1/2 inches of water per week. On a 10,000 sq.ft. lawn, this amounts to between 6,000 and 9,000 gallons of water per week.

● **Shallow perched water tables** where sod is to be laid on heavy clay soil can be avoided by developing a "transition zone." Work about 1/2-inch of peat moss into the top inch or two of soil so that the change between soil types is not so abrupt.

Conclusion—The choice of turf establishment is often a budget-driven process. Seeding may cost one-fifth to one-eighth that of sodding, but I have never known a client who was unhappy with a proper sod job. Neither have I known anyone who

region. Most growers use certified seed which assures genetic purity of the cultivars. Many northern growers use such dependable cultivars as Touchdown, Adelphi, Glade, Rugby, Trenton, Ram I and many others.

Some sodding failures are a possibility, most stemming from poor seedbed preparation (see sidebar). Other problems:

● **Bad edges** that are not firmed enough to make good contact with the soil, resulting in edge drying and weed invasion. This is eliminated by light rolling as the sod is laid.

● **Over-applying water.** Ten to 14 days

look pretty good on about 1 to 1-1/2 inches

Table 1. Methods of seeding

Method	Advantages	Disadvantages
spreaders	lowest initial investment best for homeowner situations	wind can carry seed seed needs dragging and mulching
cultipacker	excellent seed-to-soil contact best in commercial, flat areas leaves neat finished seedbed	seed needs mulching
hydroseeder	fastest method best in difficult-to-reach areas	leaves seed on top of soil

Source: the author



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

Table 2. Preferred methods of establishment

Situation	Seed, spread	Seed, hydro	Seed, cultipacker	Sod
urban construction site				●
shaded construction site		●		
athletic fields	●	●	●	●
mixed-use parks	●	●	●	●
home lawn renovation	● (shaded)			● (open)
highway, right-of-way		●		● (edging)

Source: the author

wanted to withhold final payment until full turf coverage was complete. Payment

decisions are often based on emotional judgment: a positive one results in faster payment than a negative one. Sod usually wins out in this circumstance.

Sod growers are able to produce weed-free sod in a short time, then harvest it efficiently with modern machinery.



Logically, where water is not readily available for establishment, then seeding would work well. Many a site has been hydroseeded initially, then watered until emergence with that hydroseeder—yielding a good stand of

grass for the purpose of that site.

—The author is an extension horticulturist and turfgrass specialist with North Dakota State University, Fargo.

Correction

■ The chart accompanying our February spring fertilization article incorrectly listed O.M. Scott & Sons' Poly-S fertilizer as containing methylene urea. Poly-S does not contain methylene urea. It is a polymer encapsulated urea, SCU.

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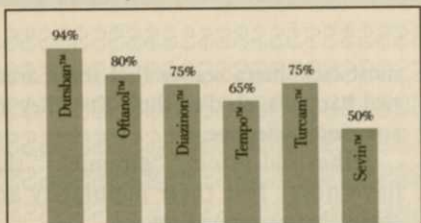
Here's a good example. By mixing insecticide with insecticidal soap, you can reduce the amount of insecticide you need on your

ornamentals by about fifty percent. Insecticidal soap controls most soft-bodied insects and mites. By adding insecticide, you'll also take care of tougher insects, like scales and worms. University studies



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Pricing from page 24

drive prospects past other properties that are badly landscaped and carefully point out what's wrong with them. Now the prospect can see for him or herself why the quality of your work justified your charges.

4) Seek out and use products that will allow you to do more work in less time—but charge the same or more for

such services. A case in point is using a growth regulator to cut the number of times you must visit the account to mow. This can be especially helpful for time-consuming hillsides, terraced landscapes and roadsides.

5) Don't overlook the high value of old pricing techniques such as \$29.95 rather than \$30 for a single item such as a potted plant; and "two-fer" prices, such as two for \$59.95. Despite the fact that

most customers realize that these aren't real bargains, studies show that they are amazingly effective.

Other old pricing "gimmicks" that have never lost their popularity and should be mentioned are:

6) Discount coupons which are sent through the mails, given to customers when purchases are made, placed behind the windshield wipers of nearby parked cars, or featured in ads.

Although the first purchase is made at a lower price, this is compensated by higher prices later, when customers have experienced the value of your landscaping services. Be sure to set time limits on coupons ("Good only until Sept. 30") to alleviate customer procrastination.

7) "Loss Leader" specials consisting of landscaping services sold to customers at a loss in order to encourage the purchase of other services, such as late fall leaf raking and yard work.

8) Offer "extras" that sugar-coat high costs, such as free how-to books on gardening, and free telephone advice on landscaping problems. Always detail such premiums in your ads and verbal sales presentations, and be sure to point out, if true, that no competitor offers such useful and welcomed gifts.

The marketing department of Evergreen Services Corp. of Bellevue, Wash., recently developed a two-page customer newsletter that gives maintenance tips and horticultural information. The little brochure also enhances the company's visibility and gives customers a place to air their concerns.

9) Remember that the marketing tool that will never be surpassed regardless of price is the reputation of your business. This reputation is based, of course, on performance.

"Our firm learned the hard way," reports one landscaper. "After experimenting with several marketing strategies, we are convinced that, even though our prices are considered to be high, most of our new business comes from customer referrals. Our clients are convinced that, even though we charge more than the competition, what they get for their money is well worth it.

"They pass their convictions on to their friends, who in turn become valuable clients."

—Bess Ritter May, author of this article, is a freelance writer based in Philadelphia, Pa. She is a frequent contributor to *LANDSCAPE MANAGEMENT*.

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STRICTLY GOLF

U.S. Senator points finger at golf course managers

All agree: environmental responsibility falls squarely in the lap of the golf course superintendent.



Superintendents are environmentalists who must work with Congress for fair legislation, say Bob Ochs (left) and Bill Roberts (center), representing the GCSAA, and Senator Howard Metzenbaum.

■ Can it be? Is the golf course superintendent really viewed as an environmental villain in the hallowed halls of our national government?

"Golf courses were using four to seven times the (intensity) of pesticides as agriculture," Sen. Howard O. Metzenbaum (D-Ohio) told members of the GCSAA earlier this year in Anaheim, Calif. "You've got to cut down your use of pesticides and water."

Metzenbaum, doubtless feeling the euphoria and energy that followed his

party's first Presidential victory in 16 years, told the superintendents that they should more closely align themselves with environmental groups.

"Many of you have earned the title of environmentalists. But as an industry, you can and should do more. Help educate the people who use your golf courses; they can live with brown spots and weeds—it won't hurt their game."

Kirk Kahler, government relations liaison for the GCSAA, sees a slight difference

between Metzenbaum's perception of the golf course superintendent and that of the EPA.

"The EPA thinks golf courses are head and shoulders above the rest of the green industry," Kahler says.

Another message that comes through loud and clear when legislators like Metzenbaum take the pulpit: the big-time industrial polluters are a moving target, but our lawmakers know exactly where to find golf course superintendents.

"You people are in a position to do something about this environment," Metzenbaum says. "I think you'd be a lot smarter to figure out how to join and work with the Congress and administration. And become the leaders in your community. I urge you to take the leadership in pre-

ELSEWHERE

Golfers like sign posting programs,
p. 66

Run-off comes in handy against Calif. drought,
p. 67

'Scout' programs popular on some golf courses
p. 70

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Jones: Architects, supers must show environmentalists 'we follow the rules.' Photo by Terry Husebye

...serving the environment. Get off your butts."

Bill Roberts, the GCSAA's past president, defends Metzenbaum's statements.

"He's not saying anything different than we're saying," Roberts observes. "We are simply going to have to be environmentally responsible."

Famed golf course architect Robert Trent Jones Jr., in a speech to the USGA Green Section (just one day following Metzenbaum's presentation), confirms:

"Get off your butts."

—Senator Howard Metzenbaum

"The message is loud and clear," Jones says. "The environmental movement is here to stay. But let me caution against the violent kneejerk reaction to environmentalists. They only want what we want: to make the country a better place."

"Show them that we follow the rules. That we are dedicated environmentalists and getting better. That we have learned to be lean with our chemicals and water. That we now have new and different kinds of grass and plants."

"Golf is not an environmental problem—it's an environmental answer."

—Jerry Roche

'Informational' sign posting earns high marks from golfing public

■ This program, using write-on, wipe-off signs, didn't just advise golfers of pesticide applications. The signs also served to inform golfers of other maintenance practices like aerifying and top-dressing. Participating golf course superintendents, to varying degrees, took advantage of the opportunity to give golfers course maintenance information beyond chemical applications.

Posting is growing at golf courses in the United States. Some states require it to warn golfers of the possible presence of pesticides. (Nebraska does not.) Typically, courses post with pre-printed signs in language—depending on one's views of pesticides—that might seem threatening.

"This was not the typical 'caution/warning/pesticide-applied' approach," explains Dr. Roch Gaussoin of the University of Nebraska. The university, in cooperation with the Nebraska Golf Course Superintendents Association, came up with the more informational posting program. "These signs had multiple uses."

A snapshot of the courses using the

voluntary posting:

- Four public, three semi-private, and three private.
- Two nine-hole and eight 18-hole courses.
- Five with fewer than 30,000 rounds per year, four with 31,000 to 60,000 rounds, and one with more than 60,000 rounds.

Golfers responded positively to a different kind of posting program at 10 Nebraska golf courses in 1992.

- Annual maintenance budgets ranging from less than \$50,000 to \$249,000.

When Gaussoin surveyed golfers and superintendents at the 10 courses at the end of the 1992 season, both groups said they supported this more-inclusive posting.

For instance, 74 of the 75 golfers answering the survey said they felt the program should continue the following

season, while eight of the 10 superintendents said they would definitely use the program the next season. The other two said they probably would.

Although a few of the golfers admitted they were indifferent to posting, most felt either "positive" or "very positive" toward the program.

Gaussoin said six of the 10 superintendents said they felt a stronger relationship with golfers on their courses because of the program. None felt the posting had weakened their relationship with course users.

"Public relations is one of the critical facets of being a superintendent," said Gaussoin. "Anything a superintendent can do to improve the relationship with golfers is obviously a plus."

Gaussoin said superintendents shouldn't worry about giving golfers too much information about golf course maintenance.

"It's a benefit because the golfer feels a little more involved in what the superintendent is doing, and can perceive what the superintendent is doing as doing as more professional," he added.

—Ron Hall

Using run-off helps to reduce effects of California drought

Heavy clay, high salt greens also a solvable problem at Rancho Bernardo Inn G.C.

■ Tim Roth was anticipating a real water shortage problem. It wasn't that he might have to stop irrigating, but that the homes and businesses surrounding his golf course would have to stop watering their lawns and washing their cars.

Roth is superintendent at Rancho Bernardo Inn Golf Course, 25 miles north of San Diego. Prior to the recent heavy winter rains, the continuing drought in California had county official contemplating ordering all lawn watering stopped. That would have eliminated most of the run-off that flows into a 10-acre natural lake on the edge of the course. And the lake supplies most of the course's irrigation water.

"Only our greens are watered with city water," says Roth. "Separate irrigation lines for the greens were put in two years ago, because the lake water was starting to cause some problems.

"Besides run-off from the steep rocky hillsides, the lake catches run-off from local car washes and other businesses, as well as some from surrounding lawns. The pH of the water tends to get too high from dissolved alkaline salts.

"We inject sulfuric acid with the lake water when we irrigate. That keeps the pH low enough so we can use it to water the fairways. But now, the greens are irrigated with potable water from city lines."

Heavy clay problems—According to Roth, the original greens were constructed of native "push-up" soil. As a result, the greens are mostly heavy clay, and high in salts, making them more compaction-prone and tougher to manage turf on.

In fact, Roth is gradually rebuilding the greens and sodding them with bentgrass. The first one was rebuilt last October and the plan is to re-do one or two greens each year. The existing greens are covered with a mix of about 20 percent bentgrass and 80 percent *Poa annua*.

Fairways, tees and roughs are overseed-

ed with perennial rye in October to keep them green year-round. Although the heaviest use is generally during January through June, the course gets steady play through the year and averages about 50,000 rounds annually.

Along with a regular aeration program, Roth began an intensive topdressing program this year. He puts on a light dressing of sand every month, then a heavy topdressing after every aeration, usually in February, June and September. Sometimes, he adds an extra summer aeration, using smaller 1/4-inch tines.

Roth has reduced his aeration manpower requirement by picking up cores with a Cushman Core Harvester attachment. "Before, core removal was a three-man operation," he says. "Since we got the Core Harvester, it's now a one-person job."

Because of the heavy clay and high percentage of poa, aeration cores are removed rather than dragged back into the turf. The heavy sand topdressing is dragged in, after aerification and core removal, to increase surface playability.

Cores are dumped off the side of the green and picked up later with a skid loader.

Specialized care—Roth's crews also apply gypsum to greens frequently. Both sulfuric acid and wetting agents are inject-

ed into irrigation water to increase percolation and "flush" salts below the rootzone.

Greens are mowed daily to about 9/64-inch height. Mowing height is reduced slightly to 1/8-inch during the winter months.

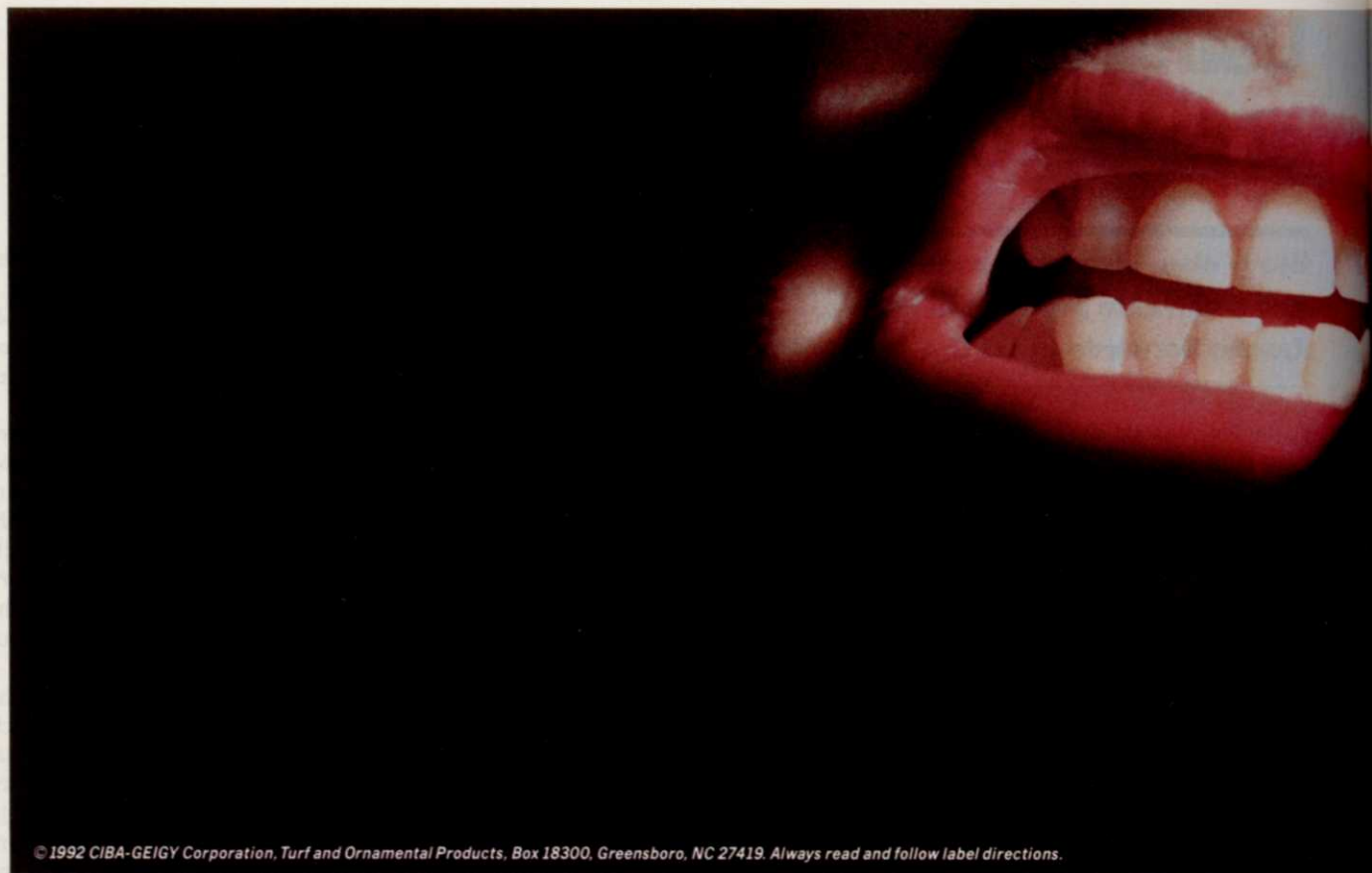
Roth follows a consistent spray program, both for fertility and disease control. Summer patch, anthracnose, fusarium patch and pythium blight can all be problems, so Roth follows a preventive schedule of spraying every 10 to 14 days from April to October. During the winter season, he sprays only as necessary, usually every four to six weeks.

Liquid fertilizer is applied weekly, using urea nitrogen in summer and more calcium nitrate in the winter. Nitrogen applications are completed with a micronutrient program, and wetting agents are added to the spray tank to enhance absorption. Extra iron is added to fertilizer, with the heaviest iron boot added in the winter months, when the turf responds better.

The course recently purchased a new Cushman Turf Master for making its spray program more efficient. The Cushman Turf Truckster with mounted Smithco sprayer that Roth had was moved to the another J.C. Resorts course, Oaks North, so spraying can be done on a more timely schedule there.



Superintendent Tim Roth checks with one of his crew members during a post-aeration core removal on a Rancho Bernardo green.



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Tell the media you will call back

■ *"Listen, I don't want to mislead you. I want to give you the exact facts. What is your deadline? I will get back to you."*

Remember this phrase. Jot it down. Keep it handy. It might keep you from saying something to the media you'll regret, says John D. Fox of Strategic Communications, Riverside, Calif.

Keep your promise, though. Return the call.

"You can make a friend out of that reporter. You can even build a pretty good image for yourself and your organization by being an expert, a good source," says Fox.

Here are some other crisis communication tips Fox gave golf course superintendents at the GCSAA Convention in Anaheim, Calif., this past January:

- Review the types of crises that might affect your business or vocation. "Most can be anticipated, not in particular, but in general," he says.

- Develop a plan ("a crash book") to deal with crises. Your staff should help you put it together.

- Keep internal communications healthy. "The worst thing that can happen in any organization in a crisis is to have everybody running off in all directions," Fox says.

- Appoint someone that is knowledgeable and articulate—it could be yourself—to be the spokesperson for your organization. "Then, ask your people, 'Please, don't talk to other people until you've told me, and let me decide on it,'" advises Fox.

- Be aware of what's going on around you and your company: environmental, political, social and economic. "Right now the public is in a pretty grumpy mood," he says.

- Keep your message simple and positive. "The media are not experts," says Fox. "They are generalists. They react to

situations very much like the public."

Fox has been a reporter, photographer, news director, and he most recently worked in communications with the University of California Division of Agricultural and Natural Resources.

—Ron Hall

The media are looking for an excuse to give you some bad publicity. Don't give them one.





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Circle No. 114 On Reader Inquiry Card

What to do when workers lose interest

by Joe Carbone

■ "I don't understand it. That guy was real gung-ho when he got here. Now he spends all of his energy avoiding work and figuring out ways to do the least amount possible. I wonder what's got into him?"

How many times have you asked yourself that same question: "I wonder, what's got into him? There are few things more frustrating to a supervisor than witnessing the case where a good worker gradually deteriorates into a marginal worker. I believe that a good supervisor has to take a completely different approach to a problem like this and that approach has to be based on a different way of thinking. All it takes to uncover the shortcomings of the standard thinking is a closer examination of the question itself: "I wonder what's got into him?"

The question implies that something might have invaded and destroyed what had been a perfectly good worker. This

idea of an "Invasion of the Productivity Snatchers" is of course absurd, and I only mention it to make a point. The question does imply that the problem is being blamed on forces beyond our control, even if not from beyond our solar system. And this is where we have to change our thinking, and our approach.

As a supervisor you are in a position to influence workers' attitudes towards their jobs. You are in a position to keep those good workers going strong. You are even in a position to improve the performance of marginal workers.

Among the primary factors that influence worker attitudes are:

- the example that is set by, and the attitude of the supervisor;
- the importance and value the supervisor attaches to superior job performance;
- the consequences and penalties that the worker's supervisor has attached to inferior job performance;
- the degree of personal challenge the worker associates with performance goals

that have been set by the supervisor.

A good supervisor can't wait around for the personnel department to send them the perfect worker. Neither can a good supervisor expect superior worker performance by adopting a course of inaction.

When we claim or imply that a problem has arisen due to forces beyond our control, we are doing little more than making an excuse for our own inaction.

The job performance of your workers is a function of the attitudes they bring to the job. The supervisor is in a position to control the primary factors that influence those attitudes. A good supervisor will learn when and how to make this happen, and won't make or accept excuses.

—From "Getting it Right: What it Takes to Become a Good Front Line Supervisor," by Joe Carbone. To order, contact: Front Line Supervisor, Publications Dept., P.O. Box 267, Lansing, NY 14882-0267.

More U.S. golf courses using 'scouts' to monitor agronomic/pest conditions

■ Scouts are sprouting up on more and more U.S. golf courses.

No, these scouts don't start fires by rubbing sticks together. They don't sit around camp fires singing "95 Bottles of Beer on the Wall." These are turfgrass scouts. They observe and record agronomic and pest conditions on golf courses.

Increasingly, they're the advance guard of integrated pest management (IPM) programs that allow golf course superintendents to target and reduce pesticide use while keeping their courses in excellent playing condition.

These scouts must be experienced and educated in turfgrass. Increasingly, however, they must also be adept at gathering and then feeding information about weather, pest activity, soil conditions, etc. into computers. This data provides a day-to-day snapshot of the condition of courses. It also builds an historical record of each course.

The data, gleaned by these scouts, guides and justifies appropriate maintenance practices. In these times of more stringent economic and environmental accounting, the data also controls the proper, most effective use of chemicals.

"In a scouting program you really

The scout does not have to be the course superintendent, but sometimes it is—particularly since many superintendents like to tour their courses daily anyway.

need to make a commitment to keeping rigorous records of what you're finding, particularly concerning pest activity," says Dr. Pat Vittum, University of Massachusetts. "That includes what you found, where you found it, how many you found, and what kind of damage you observed."

The scout does not have to be the course superintendent, but sometimes it is—particularly since many superintendents like to tour their courses daily anyway. Or the scout can be a trusted and knowledgeable assistant. In either case, the scout must develop, then commit to a plan to observe the golf course literally at the hands-and-knees level each day,

says Vittum.

"If you get into a scouting system where you're scouting regularly and you're beginning to notice the effect of weather and temperature conditions on pest activity, that will help you in predicting what's going to happen on the golf course throughout the rest of the year," says Vittum.

For those superintendents starting a planned scouting program, Vittum urges them to begin modestly, initially scouting maybe just the greens. They can expand the program as they become more comfortable with it.

A scout's activities can be as detailed as budget and time allow.

"The number of samples a scout can take has to be balanced between the cost of the time for taking them and the accuracy a superintendent demands to make the system work for them," says Vittum.

Dr. Vittum spoke about scouting at the Golf Course Superintendent's Association of American Convention in Anaheim this past November. (The GCSAA, at each annual convention, holds a one-day seminar of Scouting, Sampling and Monitoring Golf Course Pests. The next will be in Dallas, January 1994.)

—Ron Hall

Soil management program pays off for Falcon's Fire resort golf course

■ Falcon's Fire Golf Club in Osceola County, Fla. owes its reputation for "character" to a soil management program.

When the championship layout was designed by Rees Jones, certain perimeter mounding and elevation changes were built into each hole. Also factored into the construction process was an extensive soils management program which placed the right soils in the right places.

Newfield Interprises International, developers of Falcon's Fire and of Seralago, the 550-acre master planned resort on which the course is built, retained the services of Michael D. Slms & Associates geotechnical engineers.

"Over a million cubic yards of fill were

All soils were screened for organic content, percolation quality and compaction. Only soils with the highest percolation quality were placed on the fairways.

moved, but the job wasn't just a case of placing any old dirt wherever it was needed," says Seralago project director Valerie Sewell.

"The tees and greens needed to be built to exacting standards of the USGA, and the entire course envelope received a two-foot layer of fill, even before any fill for contouring was deposited.

"In addition, all soils were screened for organic content, percolation quality and compaction. Only soils with the highest percolation quality were placed on the fairways."

Since opening, Falcon's Fire is earning a reputation of being able to play shortly after heavy rains while other courses in central Florida stay closed with water-logged fairways.

Winged Foot loses 'guardian'

MAMARONECK, N.Y...A tree was cut down last month, and the game of golf is the less for it.

The elm tree at the 10th hole on Winged Foot Country Club in Mamaroneck, N.Y. was once called by writer Dan Jenkins "the greatest tree in golf." In 1987, the 250-year-old giant that guarded the green was named "big tree champion" of New York State. It was 100 feet high with a canopy over 40 feet wide. Its trunk was seven feet in diameter.

"This tree was like a person to us," superintendent Bob Alonzi told the *New York Times*, which ran a big story in its Feb. 14th editions.

Because of its presence, golfers were forced to hit to the 10th green under the treeline. "If not," the *Times* article related, "your ball would ricochet almost anywhere...if you were lucky, (it) would sometimes plop down onto the green, proving the elm had a heart, hard as it usually was."

In place of the venerable giant elm, felled by Dutch elm disease, Alonzi and his crew will transplant a pin oak this spring.

Seeking literary contributions

CHELSEA, Mich.—Dr. Trey Rogers of Michigan State University is soliciting contributions from golf course superintendents for his "Superintendents' Handbook for Golf Course Maintenance and Construction."

Each chapter will consist of contributions detailing techniques that superintendents have successfully used at their courses. Contributions should be one to five pages in length, and include photos.

For more information and/or to receive a contribution packet, please write: "Handbook for Superintendents," P.O. Box 799, Okemos, MI 48805.

'Menacing threat' to golf courses

SAN FRANCISCO—Golf course architect Robert Trent Jones Jr. sees the nation's financial instability as playing a large role in the downturn in golf course development. But, according to his "Reading the Green" newsletter, Jones sees a much larger "menacing threat" to golf development in the U.S.

"The major concern to our industry is the so-called 'environmental movement,' which has targeted golf courses for capital punishment," he writes.

"These folks...have become a part of the golf course permit approval process at every level of government, from the local planning commission to the Supreme Court.

"Their familiar refrain is that the golf course is a good idea, it is just in the wrong place. The fact is, they don't like golf courses anywhere...they just don't like the game. They see it as an elitist pastime. It occupies too much space; it takes too long to play; it is not the people's game."

Jones feels the answer to these people is for those who love the game to step forward and "shout loudly that golf is the absolute preservation of open space" and has more environmental benefits than drawbacks.

"Let's join together and actually sell the game to those who make land use decisions. Loud and clear, let's let them know that our vote is for open space, greenbelts, wetlands, animals...birds...and wholesome fun and exercise."

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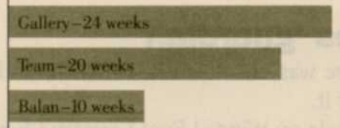
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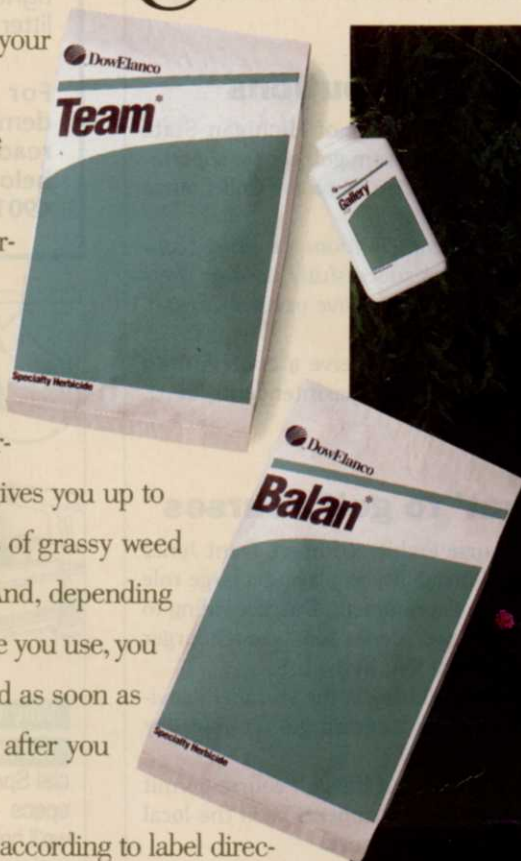
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for people interested in



LAWN CARE INDUSTRY

Do you have 'the right stuff' to become a franchisee?

Dick Nelles wants people with administrative and management skills, 'people skills' and a passion for customer service.

■ The requirements to become a good lawn care franchisee are wide-ranging, according to Canadian businessman Dick Nelles of Nutrilawn International, headquartered in Winnipeg.

A Nutrilawn franchisee has to be a person with overall management ability, Nelles notes. He has to be a good administrator, trainer and judge of personnel. He has to be able to handle the field operations; he has to be a good people person; he has to ensure his employees have a good attitude to service.

He also has to have some money in his pocket.

Nelles and his vice president and partner, Derek Riley, charge six percent royalty on franchisees' sales. In return, they provide technical support and help with business and market planning.

"It's a two-way street," says Nelles. "If our franchisees are successful, then we are successful."

Nutrilawn franchises sell for \$50,000 in larger Canadian markets and \$37,500 in smaller markets. Nelles observes that prospective franchisees also need enough capital on hand to ride out the lean years while they build up their businesses. A base of at least 30 customers is needed to make money, he notes. But the rewards would seem to be worth the wait.

The company's annual meeting in Ottawa in January focused on training franchise operators to train their staffs. "Because our franchises are growing so fast, we emphasize retraining on training procedures," Nelles explains. "The Ottawa franchise, for example, growing as it is,

has to train several new employees every year. It is a step-by-step process aimed at motivating employees to strive to excel in customer service."

Nelles reports that Nutrilawn is doing research on developing a tree and shrub program for its franchisees. Irrigation has also been looked at. In his view, though,

Nelles: Lawn care is large size business opportunity with good growth potential.

"you have to stick to your knitting"—your core business.

"Any add-on services should only be approved where a guy is doing a real good job of looking after that core business," Nelles maintains. "You have renewable business out there and opening new accounts to worry about. A new division requires more people and capital. From all the research I've done, the consistent message is that add-on services can detract from customer service. I would be very cautious about approving add-on services to what we do."

The keys to operating a successful franchising business like Nutrilawn are a good business plan and training program, choosing the right kind of people as franchisees and staying focused on your core product or service, Nelles has learned. Using that formula, Nutrilawn has grown to 26 franchises with system-wide sales of \$5 million in seven years. Projected growth for 1992 was 30 percent; Nelles expects 1993 sales to reach \$7 million.

When he started the business in Winnipeg after being a long-time agricultural equipment dealer there, he had 500 customers. Last year, there were 50,000 Nutrilawn customers in Winnipeg alone.

"From the outset, I felt the business could be duplicated successfully elsewhere," Nelles says. He developed solid training and support programs, and began marketing franchises.

"It is a large size business opportunity that offers good potential growth," he points out. "We have divided Canada into



87 exclusive territories."

Nutrilawn's first franchisee opened in Edmonton in 1987. Last year, that franchisee had 38 summer employees and took in more than \$1 million in revenue. Newer franchisees in Ottawa, the nation's capital, and Halifax are growing even more rapidly. Ottawa's revenue, for example, has jumped from \$100,000 in its first year to \$400,000 in 1991 to \$650,000 last year.

Although the Nutrilawn name is registered in Washington, D.C., Nelles has no immediate plans to sell franchises state-side. "We want to fully look after Canada first and make sure that our Canadian franchisees are successful," he says. "We have franchisees from coast-to-coast, but there are still a lot of areas to fill in."

—The author, Myron Love, is a freelance writer based in Winnipeg, Manitoba, Canada.

PLCAA's stand on pesticide use

■ This is where the Professional Lawn Care Association of America (PLCAA) stands on pesticide application issues.

PLCAA made the following recommendations in a briefing paper to participants at its Day on the Hill in Washington D.C. this past February:

Customer right-to-know: PLCAA's members endorse providing their customers with a written, "rolling" Customer Service Agreement, given to customers at time of an application. It would include the brand name or common name of the product applied; the general reason for use as stated on the label; the maximum concentration of the end-use product and the rate of application; any special instructions relating to the use of the lawn by the customer after the application is made; and, on request, a copy of the product label.

Notification registry: PLCAA supports the creation of a notification registry in each state. Anyone who pays an initial fee and an annual renewal fee (to be used to defray the costs of operating the registry) would be eligible to be placed on the registry, with provisions for the fee to be waived in bona fide cases of inability to pay. State regulatory agencies would then send the registry list to commercial and "part-time" applicators (e.g. building maintenance personnel) on a quarterly, or as-needed basis.

Pre-application notification: Commercial lawn care companies and part-time applicators should pre-notify the following people one day in advance of intended applications: customers (if applicable); persons on the notification registry that are adjacent to the customer's property; or an appropriate school authority.

Posting: National posting would build public recognition of the industry standard for the size and type of signs. Commercial applicators, part-time applicators and do-it-yourselfers should affix a posted marker or markers at the primary point or points of access to a property at the time of application. Retail establishments would be required to provide posted markers and information on the requirement to their customers.

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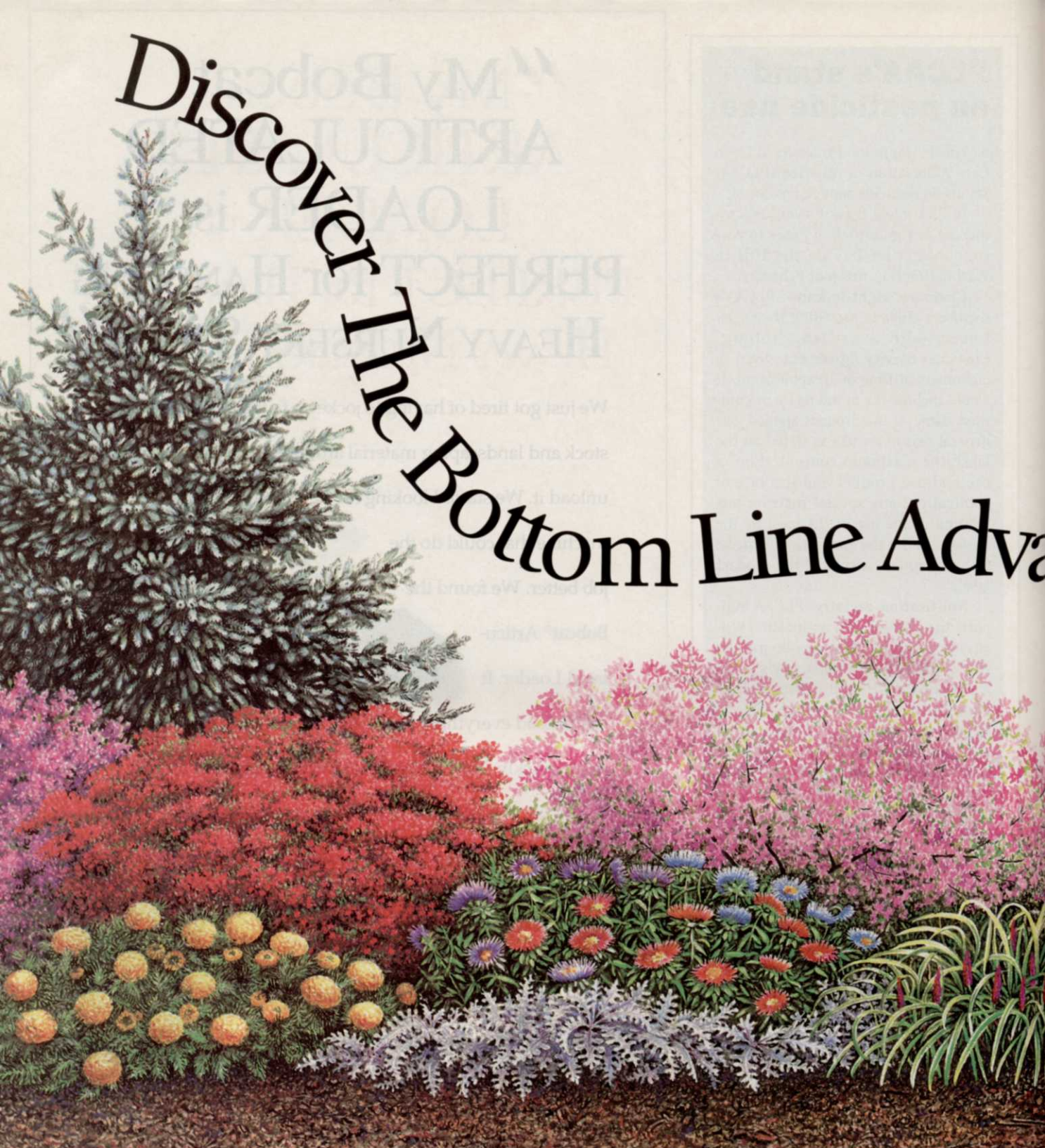


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JOB TALK

Oil changes help Bailey's truck fleet stay trouble-free

Frequent oil changes are essential if you expect to get your money's worth—and more—from trucks and tractors.

■ The key to a good preventive maintenance program on your tractors and trucks is frequent oil changes, says Len Bondeson, maintenance supervisor at Bailey Nurseries, St. Paul, Minn.

The company operates 175 pieces of equipment, from Ford F600s to a Kenworth with a 300 Cummins engine; from new vehicles to ones from the 1950s.

"Although there's more stress on a tractor digging in the field than on a truck making a delivery 100 miles away, each piece of equipment gets the same care," says Bondeson.

Each day, Bondeson and his maintenance staff of three will bring several pieces of equipment into the 2,800-sq.ft. maintenance shop for inspections, oil changes and maintenance. "We try to work around production and delivery schedules," Bondeson admits.

Today's oils are designed with universal characteristics to accommodate all types of gasoline or diesel fuel engines. Using a multigrade universal lubricant offers two major benefits:

- 1) inventory consolidation; and
- 2) reduced application errors.

"In addition, says Dennis Boggs of Phillips 66, "multigrade oils are more versatile than single grades, because they can meet specific requirements for both old and new vehicles in the same fleet."

All of Bailey's tractors are overhauled at the nursery, but



Checking the oil at three-hour intervals keeps Bailey's tractor fleet always ready to do the toughest jobs.



Bailey Nursery supplies more than 4,000 retail nurseries, landscape companies and garden centers nationwide with nearly 10 million trees, shrubs and container plants.

because of increased fleet size, trucks are now sent to a local repair shop for overhauls.

To supplement these major in-shop inspections, operators conduct their own equipment checks at least daily. These usually involve checking the oil once or twice a day, checking hydraulic fluid and greasing all joints.

"During the fall, a digger can run 9 to 14 hours a day," says Bondeson. "The operator will check grease and oil and give the

Maintenance scheduling

Maintenance	Tractors	Trucks
Oil change	100 hrs.	2,000 mi.
Engine overhaul	15,000 hrs.	250,000 mi.

digger a complete look-over every three hours to make sure everything is running right."

Maintenance is important both winter and summer. In the winter, trees must be dug out of what is sometimes frozen ground. In the summer, dust is a constant problem that puts extra stress on an engine.

"We haven't had a problem with dirt in the engines, though, because we change oil frequently to get rid of any dirt and grime suspended in the oil," Bondeson notes.

Phillips 66 Super HD II motor oil is changed in tractors at 100-hour intervals and in trucks and buses at every 2,000 miles. Phillips 66 HG Fluid is changed in hydraulic systems and transmissions once a year.

An oil analysis program was recently implemented to determine if oil-change intervals could be safely extended. Proper analysis and interpretation of oil samples can help operators find internal engine problems early, or allow them to increase intervals between service.

"The toughest part is reading the report," says Bondeson, who worked closely with Fuel Oil Service, plus an independent oil analysis company.

Lubricants experts at Phillips 66 advise operators to avoid making decisions based on oil analyses, unless they've mastered the art of reading them or have their oil supplier or oil analysis company help interpret the results.

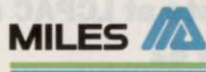
Oil analysis programs can determine if oil changes can be safely extended.

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HOT TOPICS

EPA will ask states for yet another round of lawn care inspections

Industry says violation rate of 1992 inspections gives misleading impression of lawn care safety.

ALEXANDRIA, Va.—When states, directed by the U.S. EPA, conducted 760 additional inspections focusing on lawn care in 1992, about 34 percent of the inspections found violations.

What does this mean? That's what several key lawn care industry members asked U.S. EPA officials at a meeting of the Lawn Care Pesticides Advisory Committee (LCPAC) here in February.

What it means is another round of unannounced inspections of lawn care application companies across the country, says EPA's Maureen Lydon.

The EPA wants yet more data on the industry. Meanwhile, it's putting together a "compliance assistance packet" which will tell LCOs how to better meet state and federal regulations.

LCOs at February's LCPAC meeting claimed the fiscal 1992 inspections unfairly portrays the industry's willingness and/or ability to comply with oftentimes confusing pesticide-use regulations. They pointed out that 25 percent of the documented violations involved recordkeeping and other non-safety issues.

Even so, as one industry member admitted, the 34 percent violation rate will make "great sound-bite stuff." Industry critics, he said, will point to this number should lawn care be the subject of a

Congressional hearing again later this spring. (As of mid-March no plans had yet been made for more so-called 'victims' hearings.)

Indeed, the EPA directed the state agencies to inspect 10 additional lawn care firms each (actually some inspected more) as a result of just such a lawn care hearing before a U.S. Senate subcommittee in May 1991.

Kimm: not a statistical sample

EPA official Vic Kimm of the '91 hearing. At that Senate subcommittee hearing both pesticide critics and the General Accounting Office scolded the EPA. The resulting 1992 inspections provide a "snapshot" of LCOs' activities, not a statistical sample, he explained.

"We can take the data and read it in a lot of ways," admitted Kimm, deputy assistant administrator of the Office of Prevention, Pesticides and Toxic Substances.

But Russ Frith, President and CEO of Lawn Doctor, said unlicensed applica-

"We were asked, 'What do we know about the nature of violations?'" said

Frith: unlicensed operators are a problem



Frith: unlicensed operators are a problem

tors accounted for 15 percent of all violations, and should not be included with licensed operators. Marty Erbaugh, president of Lawn-mark, added that the "snapshot" drawn from the inspections is too narrow.

"We're not dealing with any kind of national crisis, but we do think we can do a better job of it (compliance)," responded EPA official Stephen L. Johnson.

Art Losey, a regulator from the Washington State Ag Department said he was surprised at the number of violations, but admitted, "some of our best applicators, if you look close enough, you're going to find something wrong. That's the world out there."

Even so, Losey said professional users of lawn/landscape pesticides seem to be doing a better job of complying with regulations in his state.

Industry and the EPA agreed on the need for a more aggressive educational effort directed at lawn/landscape care companies.

The EPA's Maureen Lydon promised that "compliance assistance packets" would be made available to lawn care companies before the additional lawn care company inspections planned for fiscal 1994.

But when a lawn care spokesman suggested that applicators be supplied with this information just before an impending inspection, regulatory officials balked. Inspections must be unannounced, they insisted.

"If our people (applicators) are licensed, we expect them to know the law," said Washington State's Losey. "We expect them to know how to read a label."

—Ron Hall



Kimm: not a statistical sample



Erbaugh: 'snapshot' too narrow

INSIDE

'Pesticide-sensitivity' debate at LCPAC meeting, page 82

Scotts, Sandoz fungicide could get '94 labelling, p. 82

Family leave bill specifics available from nurserymen, p. 82

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Pesticide-sensitivity issue debated at LCPAC meeting

ALEXANDRIA, Va.—Mary Lamielle says she suffers from Multiple Chemical Sensitivity (MCS). She says she becomes ill when she's exposed to any number of chemical products, pesticides included.

Lamielle is president of the National Center for Environmental Health Strategies, Voorhees, N.J., and also a member of the U.S. EPA-sponsored Lawn Care Pesticide Advisory Committee (LCPAC).

"Pesticides are making people sick and keeping them sick," said Lamielle during a 10-minute recitation in front of the 24 LCPAC members. But MCS is not exclusively tied to pesticides, she said. It can be initiated by exposures as disparate as automobile exhaust and the fumes from new carpeting.

Once an individual acquires a MCS they often react to more and more chemical products at lower and lower exposure levels. Symptoms include headaches, fatigue, mental confusion and upset stomach, she said.

"My guess is that many of your (pesticide) applicators have spoken to people

who are sick or are getting sick," she claimed.

Allen James of RISE (Responsible Industry for a Sound Environment), and also a member of LCPA, protested. "This presentation is not scientific nor is it contributing to our deliberations," he said.

Several other LCPA members representing the chemical industry pointed out that opinion, even within the main-stream medical community, concerning MCS isn't as clear-cut as Lamielle claims.

"It seems the EPA itself has some question about Multiple Chemical Sensitivity," said William Chase, Chevron Chemical Company.

EPA's Vic Kimm, however, termed MCS "an area of growing concern."

The LCPAC was established one year ago under the umbrella of the U.S. EPA. It is composed of about 25 members representing the chemical industry, lawn care business owners, several public interest groups, and state agencies. It has met three times in the year since it was formed.

—Ron Hall

Scotts, Sandoz plan 1994 label for jointly-developed fungicide

DES PLAINES, Ill.—Sandoz Agro and O.M. Scott & Sons has signed a limited time, exclusive agreement for Rizolex fungicide.

Rizolex, as a stand-alone product or in combination as a fungicide premix, will use a new chemistry developed by Sandoz. According to a Sandoz press release, this unique chemistry provides superior, cost-effective brown patch and snow mold con-

trol for both cool- and warm-season turf.

Rizolex (tolclofos-methyl) has been field tested by the two companies since the mid-1980s. Sandoz expects it to be registered as early as 1994, with the market launch of Scotts' products formulated with Rizolex possible in 1995. Scotts estimates that it will use Rizolex in up to six turf care products.

FTGA coloring book tells value of turf

■ The Florida Turfgrass Association (FTGA) wants to educate children on the benefits of turfgrass. It's created an activity booklet called "Follow FTGA's Turfgrass Friends."

Coloring pages, cartoon characters, word puzzles, and drawing games fill the booklet. All illustrate the importance of turfgrass to the environment and our quality of life. Through these illustrations and activities, children learn about the role of turfgrass:

- ✓ in trapping air pollutants,
- ✓ absorbing carbon dioxide and releasing oxygen,
- ✓ filtering and filling the underground water supply,
- ✓ cooling the environment and preventing erosion, and
- ✓ providing great playing surfaces.

For more information on this project, contact the FTGA office, 302 S. Graham Ave., Orlando, FL 32803; (800) 882-6721.

Family medical leave: the rules

WASHINGTON—The Family & Medical Leave Bill has passed both the House of Representatives and Senate, and Pres. Clinton has signed it into law.

Here is what is required of you, if you employee 50 or more workers:

● 12 weeks of unpaid leave during any one-year period for births, adoptions, care of seriously ill children, parents or spouse. (Only workers who have been employed for at least 12 months and for at least 1,250 hours of service during those 12 months are eligible.)

● You must return the worker to his/her old job or an equivalent position.

● You must maintain existing health care benefits.

Employees who use the medical leave are not eligible for unemployment compensation during that period. And if the employee does not return to work, you can recapture the health care premiums paid during the leave.

You may also deny leave benefits to salaried employees in the highest 10 percent of your workforce if the leave would create "substantial and grievous injury" to the business.

Look for more information when the American Association of Nurserymen publishes a compliance guidebook. For more information on the guidebook or membership into the AAN, write 1250 I St., Suite 500, Washington, DC 20005 or phone (202) 789-2900.

Business coaching services offered

BAKERSFIELD, Calif.—The Landscape Horticulture Center for Personnel Development (LCHPD) is offering a new service that can provide landscaping, nursery and tree care companies with information and guidance for successful business management practices.

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CUSTOMER SERVICE TIPS

Good service results when teamwork's the top priority

by Ed Wandtke

■ This question is always being discussed in the lawn care industry, yet no one seems to be able to really answer the question. Owners, technicians, salesmen, customers—who is really to blame?

After years of discussing customer service with owners and service personnel in the industry, I believe I understand who is to blame. But first we must look at what is necessary for good service.

Good service is the result of three people coming together: the owner, the technician, and the salesperson. When these three can identify customer problems, perform the service, and provide follow-up, the customer is satisfied.

The owner must see to it that the employees are properly trained, the salesperson must correctly identify the customer's problems and expectations, and the technician must perform a thorough and quality job.

If you consider service to be a working triangle among the owner, technician and salesperson, you can visualize what is needed for good service. So who is to blame for bad service? The answer is this: your "triangle of good service" has become a "triangle of trouble."

The triangle of trouble is the result of poor communication: among employees, customer and company owner.

I have yet to hear of bad service when owners do the work themselves. The reason for this is because they have no one to communicate with but themselves. As a result, there are no communication blocks.

Three easy steps to good service:

1) Communicate with your employees what you believe good service to be. Make sure the salesperson and the technician completely understand what you mean.

2) Train your employees so good service is easy. Regular training sessions are the key to maintaining a consistency in the quality of your service.

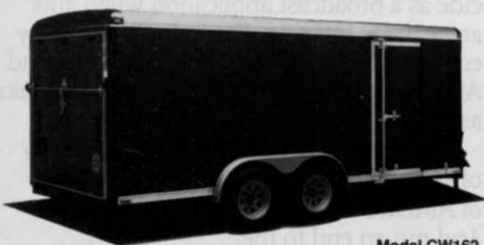
3) Follow up with the customer to make sure he or she is completely satisfied. This is a good way to see if your company is having any problems.

Work at these three easy steps and next time I see you at a conference or trade show, I hope you can tell me your company has a "triangle of good service."

—Ed Wandtke is a principle in Wandtke & Associates, 2586 Oakstone Dr., Columbus, OH 43231. For further information about the items covered in this article, phone (614) 891-3111.

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GREEN INDUSTRY EVENTS

APRIL

19-21: International Golf & Resort Development Show, Fiesta Americana Condesa Resort, Cancun, Mexico. Contact: GDII Financial Seminars, P.O. Box 5194, Ignacio, CA 94948-5194; (800) 285-2332.

25-29: American Society of Golf Course Architects annual meeting, Ritz-Carlton Hotel, Philadelphia. Contact: ASGCA, 221 N. LaSalle St., Chicago, IL 60601; (312) 372-7090.

MAY

2-4: Menninger Sunbelt Tree Conference, Hotel Royal Plaza, Lake Buena Vista, Fla. Contact: Linda Van der Zee, Florida Nursery Growers Assn.,

5401 Kirkman Rd., Suite 650, Orlando, FL 32819; (407) 345-8137.

12: North Carolina Turf & Landscape Field Day, North Carolina State University Field Center, Raleigh. Contact: Turfgrass Council of North Carolina at (919) 695-1333.

13: Landscape Irrigation Auditor Training Course, Provo, Utah. Contact: Irrigation Association, 1911 N. Fort Myer Dr., Suite 1009, Arlington, VA 22209-1603; (703) 524-1200.

17-18: Practical Tree Care Workshop, Indianapolis. Contact: Dr. James R. Fazio or Kathy Austin, The Arbor Day Institute, P.O. Box 81415, Lincoln, NE 68501; (402) 474-5655.

INFO CENTER

Useful literature and videos for LM readers

LIGHTING GUIDE...A new guide to outdoor lighting is available from Intermatic's Professional Landscape Lighting Products Division. "Light the Night" is a 20-page guide divided into six sections, including basics of low-voltage lighting, lighting techniques and products. Cost is \$1.75; send check or money order to Light The Night, Intermatic Professional Lighting Division, Intermatic Plaza, Spring Grove, IL 60081-9698.

STOP THIEF!... "Stand up to the IRS" is a new book by tax attorney Fred Daily, written to offer relief for anyone who feels taken for a ride by the IRS. Most of the book covers audits and bills, but there is plenty of advice to taxpayers

on how to file their returns and stay out of trouble. Available for \$19.95 from Nolo Press, (800) 992-6656.

NEW FROM ALCA...The Associated Landscape Contractors of America has several new publications for exterior and interior landscape contractors: "Crystal Ball XIV: Client Sensitivity in The Total Quality Landscape Contracting Company"; "Understanding Business, Wage and Benefits"; and "Preparing a Landscape Company Policy Handbook." These and other publications are listed in a free catalog. Contact the ALCA Publications Department, 12200 Sunrise Valley Drive, Suite 150, Reston, VA 22091.

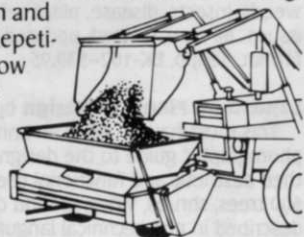
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Landscape Construction, Problems, Maintenance

Landscape Problem Management by Balakrishna Rao, Ph.D.

A new release! This is a compilation of Dr. Rao's popular "Problem Management" column from Landscape Management Magazine. Answers readers' questions and solves problems about weeds, insects, disease, plant selection, and a range of landscape issues...all new, revised, updated and presented in a categorized format. 153pp. BK-102-\$39.95

Landscape Plants in Design by Edward C. Martin

This must-have book is an annotated black-and-white photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. More than 600 trees, shrubs, vines, ground covers and turfgrasses are described in non-technical language, spotlighted in 1,900 photographs. Select the best plant materials for use in landscape design. Quick references to specific design qualities and growing conditions. 496pp. BK-365-\$75.95

Means Landscape Estimating by Sylvia H. Fee

2nd. ed. Written by a highly respected landscape designer and contractor, this updated book is an organized working tool that "talks you through" every step of preparing effective bids and estimates. Guidance for planning jobs and marketing your company. 275pp. BK-346-\$64.95

Means Site Work and Landscape Cost Data 1993

12th annual ed. Plan, budget and estimate site work construction. Data is up-to-date for estimating infrastructure improvements, environment-oriented construction, hazardous waste and ADA-mandated handicapped access. New items include additional piping and drainage, street openings, pavement repairs, handicapped ramps, railings, hardware. Check cost items using the handy page tabs and comprehensive index. Current guidelines and background references for solving estimating problems. 57 tables of Assemblies Costs with 3,000 supporting line items to make conceptual estimates (with 10% accuracy). 550pp. BK-347-\$79.95

Train one...or many...new employees and update current staff inexpensively and effectively. Select the videos you need and use them again and again. Available in English (E) or Spanish (S).

Landscape Equipment Maintenance Series (VHS Video)

This five-title series gives you more than an hour of detailed instruction on one tape. Or, choose just the titles that apply to your business:

Power Blower presents proper procedures on maintenance, safety and operation for optimum performance of the most valuable piece of landscaping equipment, the power blower. 10 min. VS-102E or S

Rotary Edger/Trimmer teaches how to keep this valuable tool in top shape with proper maintenance, safety and operation for crisp and neat lawn edges. 13 min. VD-103E or S

21-Inch Rotary Mower shows maintenance, storage, operation and safety to get the best performance and a well-groomed job from your mower. 14 min. VD-104E or S

Power Shears require proper maintenance to ensure safe, efficient operation. Covers what you need to know about gasoline models. 12 min. VD-105E or S

String Trimmers can reduce the time for difficult mowing and trimming. Get the best results from proper maintenance, safety and operation. 13 min. VD-106E or S

Each Title: \$49.95. Complete Series: VD-EMS-\$199.00

Landscape Tools Use and Safety (VHS Video)

Choose the right tool for the job and know how that translates into safety for the landscape worker. Illustrates the relationship of construction materials to the quality of landscape tool. Safety precautions, proper clothing and back care are thoroughly discussed. See commonly used tools in action, such as scoop, round and square point shovels, rakes, forks, cultivators, hoe, picks, mattocks. 25 min. VD-107E or S-\$89.95

Landscape Irrigation Maintenance and Troubleshooting (VHS Video)

Starting with an overview of the operation and maintenance of irrigation systems, this video details sprinkler heads and drip emitters, pipes and fittings, field control wires and hydraulic tubing, valves, backflow prevention devices, mainlines and points of connection, and controllers. Troubleshooting: flow charts and step-by-step methods. 26 min. VD-108E-\$89.95

IPM (Horticulture) (VHS Video)

Beautifully filmed, excellent introduction to Integrated Pest Management (IPM) includes interviews with experts who help you learn to integrate biological, cultural, chemical strategies into an effective pest control program. 25 min. VD-109E-\$89.95

LANDSCAPE MANAGEMENT

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Business

Get the competitive edge with good business management; improve customer service; enhance finances; know the industry; bid smart. Make sure up-to-date information is at your fingertips by adding these books to your library:

Landscaping Management 1993 Directory and Buyer's Guide

Your complete guide to the professionals you want to contact for business, including key contacts at land grant universities across the country. Sections include equipment, equipment companies, seed and chemical companies, and control products. Find extra tips and information in special departments spotlighting products and "As We See It." 112pp. IS-BG-\$10.00

Bidding for Contractors: How to Make Bids That Make Money by Paul J. Cook

A clearly defined working guide for producing winning bids. Learn the benefits of the author's extensive experience in construction project management by providing contractors with the necessary tools to develop competitive bids from small jobs to multi-million dollar projects. 225pp. BK-348-\$35.95

Start & Run Your Own Profitable Service Business by Irving Burstiner

Step-by-step how to follow your dream of owning your own business into the reality of the service sector. Find out how to plan, launch and successfully run a service business: prepare a business plan; master the financials; buy an existing business or start a new one; choose a place of business; market your service; forms required for a proprietorship, partnership, corporation; model business plan; sample tax returns; and a list of selected franchise operations. 286pp. BK-349-\$18.95

Achieving Excellence Through Customer Service by John Tschohl with Steve Franzmeier

This savvy guide holds all the ways to establish caring, dependable and speedy service to bring customers back again and again. From hiring and motivating workers to refocusing company policies and procedures on customer satisfaction, this book is the answer to customer service. 304pp. BK-350-\$22.95

Finance and Accounting for Nonfinancial Managers by Steven A. Finkler

Completely updated, this expanded edition explains the basics of finance and accounting in clear, non-technical language. Get a firm grip on everyday business transactions involving finance, assets, depreciation, liabilities, inventory, costing, owner's equity, capital budgeting, audits, cost accounting, cash-flow statements, ratio analysis. Includes current tax laws. 225pp. BK-351-\$14.95

Winning Strategies for Lawn & Landscape Contractors - A System for Success by Brent Demos

Discover proven techniques that will help you meet and beat the competition! Win more bids, increase jobs from current clients, hire productive employees, and learn successful management skills. This comprehensive manual also includes effective tips for marketing and advertising, equipment management, diversification, education and training. 136pp. LSM-BK-761-\$59.95

Lawn Care Industry State of The Industry Report

An up-to-date report of lawn care business growth, average annual expenditures, and a look at the future of the industry. Ranks the largest lawn care businesses in North America. BK-230-\$10.00

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021935PM

PRODUCT SPOTLIGHT

Super-absorbent polymers worth a look in days of rationed and expensive water

■ The high cost of water is enough to make any landscape manager curious about ways to conserve this valuable resource.

One way some landscapers and lawn care professionals have begun to conserve water is with water-absorbent polymers.

Water-absorbing polymers are granules buried in turf to act as tiny sponges. They soak up and retain water, dispensing it as needed to thirsty plants.

HydroGrowth Technology of Tucson, Ariz., has a new polymer on the market. The plan includes the polymer granules, injection equipment and installation techniques for maximum efficiency.

The HydroGrowth also improves soil aeration and porosity, establishes a stronger turf root zone and increases seed emergence, allowing the turf to be used weeks earlier. The HydroGrowth polymers are potassium-based. Polymer granules are inserted into the rootzone of newly planted seeds and growing plants with a patent-pending injection process, which enables the polymers to create a "moisture wrap" effect that enhances seed germination, sprout emergence and plant growth.

Turf roots grow into moisture-swollen polymers and tap the available water and nutrients. Moisture and nutrients are ready directly, in 95 percent plant-available form.

The granules then dehydrate and absorb more moisture when it becomes available. A two-year study by the College of Agriculture at the University of Arizona compared turf treated with HydroGrowth with a control plot of untreated turf. No water was applied to any of the turf for six to eight weeks each summer. The polymer-treated turf maintained 70 to 80 percent of its original green and visual beauty after the test was concluded. The control plot retained 20 percent of its original green and was declared to be dormant. The treated plots were also green one month longer in the fall and one month earlier in the spring.

The Ritz-Carlton Hotel in Laguna Niguel, Calif., installed 43,000 sq. ft. of HydroGrowth polymers in 1989. Philip Sellick, Western Regional Director of Landscaping, says the initial cost was returned through water savings in less than one year.



Tractors are easily modified to perform polymer injections.

"Savings during this period have averaged an impressive 39 percent," says Sellick.

"It would have been impossible to maintain our turf and landscape areas at a cost-effective level without polymers during the drought," adds Sellick.

"Super-absorbent polymers not only saved us water, but enabled us to reduce our fertilizer and labor costs," says Sellick.

"We've seen firsthand how well they work, not only in saving us money, but in keeping our turf and plants in optimum condition."

Circle No. 191 on Reader Inquiry Card

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PRODUCT
REVIEW

LANDSCAPE MANAGEMENT

**Cover-to-cover
readership,
every month,
from read-
ers who
count!**

Dear Editor,

Feb. 2, 1993

I'm writing this letter, to let you know, how much your magazine has meant to me. I own a small company in Campbellsville, Kentucky. I started my lawn care company in February, of 1989. From day one, I've done everything by myself. I started out just mowing, trimming shrubs, whatever I could get. Two years ago, I started into the chemical lawn care. Last year I bought a nearby company to get their accounts. At one time, I was mowing over (70) seventy lawns a week, (5) times a year. Plus spraying about (60) sixty clients I spray, covering (12) counties, because I have almost (300) clients in a few industrial, most of Central Kentucky. Plus, I signed a new contract last year to take over grounds maintenance at nearby Campbellville College. It's a 50 acre facility, which covers mowing, tree/shrub care, athletic fields and chemical applications. I now do more time commercial accounts at night where feasible. To give me more time in the day, to spray lawns; or be at the college. I like doing it all myself, including all office work and bookkeeping, because I always know what's going on, what I've completed, and where I stand financially.

As you can see, I'm very busy, and need all the help I can get. When I read your magazine, I get useful advice and suggestions from your articles. It has helped me several times in the past. Articles on expanding and using more services, to maybe just a small tip in a special department. I just wanted to let you know that your magazine doesn't just get thrown over on a shelf, it gets read, cover to cover.

Thank you, so much!
Yours Truly,

Rob Harris

owner/operator
HARRIS LAWN CARE
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Campbellsville, KY 42719

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- Bob Mierow, West Coast representative: (206) 783-0549**

SHOWCASE

PRODUCT REVIEW

Software calculates water budgets for landscapes

Irrigation Management Group recently released its IBM-PC compatible version of ET Calc, an exclusive software program for



landscape professionals to use in calculating accurate water budgets for planting, irrigation and landscape management.

Water budgets produced from extensive calculations in ET Calc can be formatted for compliance verification of local ordinances or as required by the Water Conservation in Landscaping Act, effective January 1993.

Circle No. 192 on Reader Inquiry Card

Chipper makes mulching easy with two models

Goosen Industries' new commercial chipper/shredder for landscapers can chop limbs up to five inches in diameter, and shreds leaves or brush into a decorative mulch.

The two models available are the CS1000 PTO and CS5000 gas-powered chipper/shredders. The CS1000 PTO unit features a 540 PTO drive. The CS5000 features a 13-hp Honda gas engine.

The CS5000 is trailer mounted and can be towed easily to any work area. Blower and vacuum attachments are available and can be easily mounted to either unit.

Circle No. 193 on Reader Inquiry Card

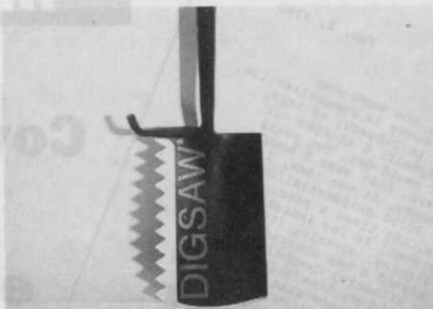
New hand tool can be used as spade, saw or hook

The Digsaw is an innovative new workhorse of great use in the garden, farm, forest or building site. The Digsaw works in three ways:

- as a spade, with an extra thick footbar for more digging power and leverage;
- as a saw, to cut through tree roots;

● as a hook, the curve footbar can be used to drag branches or gather felled undergrowth.

Circle No. 194 on Reader Inquiry Card



Retaining walls install quick and easy, no mortar required

The Diamond retaining wall system by Anchor Wall Systems, Inc., is a mortarless and pinless retaining wall system available in earth tone colors, with natural rock-face texture.



The patented retaining wall system includes a rear lip which provides automatic setback which eliminates the need for mechanical attachments and provides greater installation efficiency.

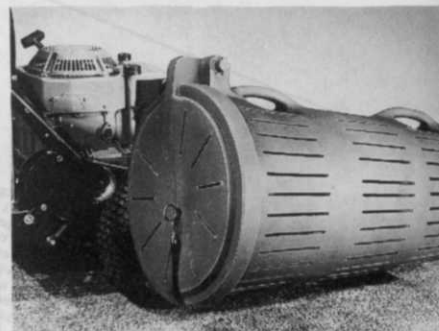
Each piece weighs about 70 lbs. and can be used in walls with heights ranging from as little as one ft. to geogrid reinforced walls more than 20 ft. in height.

The wall system is available in straight or three-way beveled split; curves, 90-degree corners and terraces can be easily built.

Diamond includes several options for custom designs and enhances rather than dominates the surrounding landscape.

Circle No. 195 on Reader Inquiry Card

Heavy-duty grass catcher fits commercial mowers



"Grass Packer" is a giant step forward in grass catchers, says Exalted Mechanicals, Inc. The unit fits virtually every commercial mower and holds up to four bushels of debris in its heavy-duty plastic body that is dent-resistant and rustproof.

Grass Packer's patented design uses both an aerodynamic entrance shoot and tapered cylinder to enhance air flow and ensure clog-free operation. In addition, it has large built-in handles and an oversized cover/hinge assembly for easy carrying and unloading.

The Grass Packer is available with a universal mounting bracket and has a one-year warranty.

Circle No. 196 on Reader Inquiry Card

Computerized watering system uses Windows

A computerized water supply system has been developed in Israel to completely handle the irrigation management of all types of grounds.

Called the Compact Controller, it is the world's first irrigation computer that operates with Windows graphic software.

The Compact Controller, which can be directly connected to a personal computer, can program up to 225 stop and start times in 24 hours, watering cycles from one minute to 24 hours, water flow rate and how much fertilizer should be added to each cycle.



PRODUCT REVIEW

It can handle 16 or 32 different watering stations using the AC model and 12 or 24 stations using the DC model. Each station is adjustable to a choice of valves, pumps, filters and fertilizer injectors.

Circle No. 197 on Reader Inquiry Card

Sunscreen protects skin with SPF 15

SBS Products presents "Deflect," an SPF 15 formula which provides 15 times the skin's normal protection from the sun's harmful ultra-violet rays. It is waterproof, greaseless and free of PABA and fragrance.

Deflect, which was supplied to U.S. troops during Operation Desert Storm, is recommended for use by utility, parks and recreation, and construction workers, or virtually anyone whose work or leisure activities involve extended sun exposure.

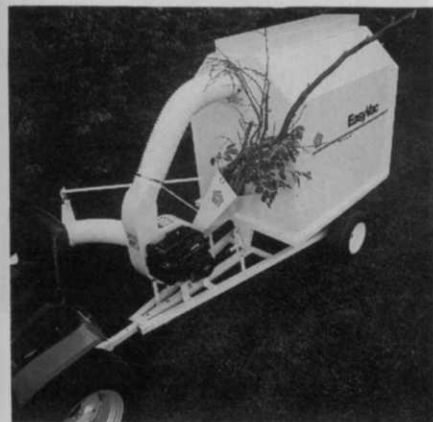
Circle No. 198 on Reader Inquiry Card

Yard machine combines vacuum, chipper in one

The EasyRake Chipper/Vac is the newest addition to the company's line of outdoor power equipment for residential and commercial use.

Features include:

- 5-hp I/C Briggs & Stratton engine;



- self-feeding chipper with large chute;
- three-inch diameter branch chipping capacity;

The Chipper Vac has a capacity of 10-45 bushels, and can dispose of three-inch branches and limbs.

Circle No. 199 on Reader Inquiry Card

Utility vehicle, sprayer for golf and athletic turf uses

The new John Deere 1800 utility vehicle can be matched with a Broyhill 200-gallon Accumaster spray system for a sta-



ble and durable self-propelled sprayer in golf course and other athletic turf applications.

The 1800 is a heavy-duty, 2000-lb. capacity traction unit that's powered by an 18-hp liquid-cooled gasoline engine for quiet efficiency. The engine is a V-twin for smooth operation. Pressurized lubrication and oil filter are standard.

A hydrostatic transmission provides infinite speed control between zero and 11.5 mph. The UV has an oil cooler and oil filter to increase machine life. A power takeoff shaft transmits power at rated engine rpm to the transaxle output shaft, to power the sprayer pump at peak torque independent of ground speed.

Circle No. 200 on Reader Inquiry Card

New chipper/shredder is a 10-hp, towable model

A towable, 10-hp Troy-Bilt chipper/shredder from Garden Way features a tow hook-up that attaches easily to



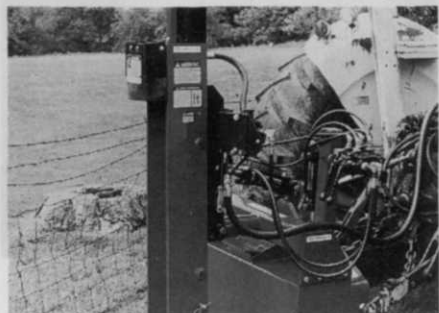
any lawn tractor or riding mower, and a modular electric start to utilize a tractor's 12-volt battery for convenient, key-switch

starting. Its large, fully-pneumatic and easy rolling tires make it ideal for large, heavily wooded properties or properties with varying terrain.

Circle No. 201 on Reader Inquiry Card

Power hydraulic center mount for easy alignment

The new Worksaver Power Ram Hydraulic Center Mount Post Drivers, Models HPD-16HC and HPD-20HC, are equipped with 3-point mounts. These mounts use hydraulic cylinders for quick



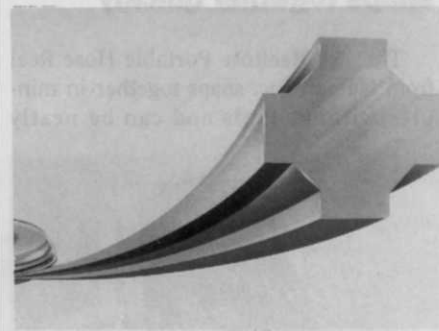
positioning and effortless alignment.

Engineered to handle all standard-size wood or steel posts, the drivers deliver up to 40, heavy impact strokes per minute without "mushrooming."

Circle No. 202 on Reader Inquiry Card

New trimmer line shaped with multiple cutting edges

The new Cross Fire premium trimmer line from Echo, Inc., features eight cutting surfaces that cut rather than tear the grass.



The multiple surface design produces eight 90° edges. The new line is made from a long-lasting copolymer used in Echo's standard line. The line is described as tip split resistant and wear resistant.

Circle No. 203 on Reader Inquiry Card

PRODUCT REVIEW

Pre-emergent treatment for crabgrass, other weeds

Pre-San Granular selective herbicide is a pre-emergent treatment for crabgrass, goosegrass, poa annua and other weeds in



lawns, parks and golf courses.

Pre-San is marketed by PBI Gordon Corporation of Kansas City, Mo.

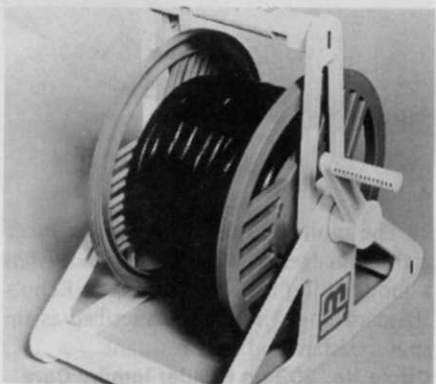
The product, acquired from Grace-Sierra Corporation, is offered in two strengths, 12.5G and 7G. These designations reflect the percentages of the active ingredient, bensulide (Betasan).

According to PBI/Gordon, Pre-San is regarded as one of the safest, most widely accepted pre-emergents available for use on bentgrass greens, tee boxes and high profile lawns.

Circle No. 203 on Reader Inquiry Card

Light, portable hose reel snaps together quickly

The 790 Reeltote Portable Hose Reel from Melnor, Inc. snaps together in minutes without tools and can be neatly

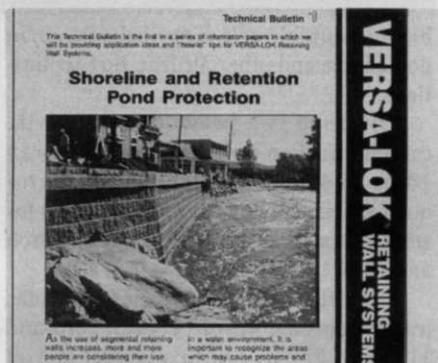


stored. The hose stores up to 150 feet of 5/8-inch hose or 200-feet of 1 1/2-inch hose. Comfort-grip handle folds down for easy storage. Dual, built-in foot stabilizers on a no-tip sled base keep the unit in place on any surface and provide for smooth winding and unwinding, says Melnor.

Circle No. 204 on Reader Inquiry Card

Brochure lists guidelines for shoreline protection walls

A guideline for design and construction of Versa-Lok segmental retaining walls in shoreline and retention pond embankment protection applications is available from

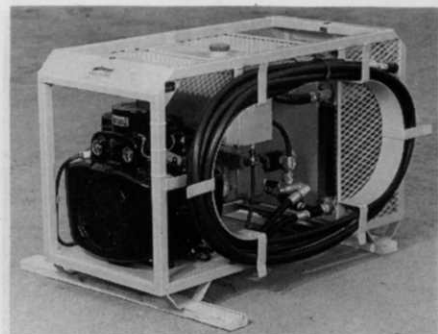


Versa Lok. Problem areas covered include foundation strength, scour protection, hydrostatic buildup and fines migration. Typical wall sections for this application are included.

Circle No. 205 on Reader Inquiry Card

Portable hydraulic power supplies range of equipment

The line of portable hydraulic power units from Poweram Corp. is designed to supply a wide range of construction equip-



ment. The independent power packs, in easy-to-handle skid frames, use a variable volume pump to achieve the optimum in

speed, power and economy.

Other features include:

- dependable gas engine, electric start;
- safety relief valve,
- magnetic suction filter and
- high efficiency return line filter protection for the pump.

Circle No. 206 on Reader Inquiry Card

Centrifugal pumps eliminate engine misalign problems

Berkeley pumps has rugged type B pumps with end suction centrifugal.

The B-series pump end is for mounting on engines with S.A.E. standard flywheel housing.

These products are for application in general irrigation, water transfer or any water pumping applications within its performance range.

The B-series centrifugals have a capacity range of 50 to 5000 gallons per minute. Horsepower ranges from 15 to 240 BHP with heads to 550 feet.

Circle No. 207 on Reader Inquiry Card

High wheel mower features exclusive mulching system

Yazoo Manufacturing Company has a new high wheel mower, the S22CB1.


The new mower features Yazoo's exclu-



sive Vari-Mulch system, and other user-friendly features. The Vari-Mulch system lets the operator vary the rate at which clippings are returned to the lawn. This enables him to match the mower to mowing conditions.

In heavier, wet grass, when other mowers would bog down, the operator can shift the selector to the heavy grass position, allowing easy mowing and mulching without a loss of power or mulching ability.

Circle No. 208 on Reader Inquiry Card



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PRODUCT REVIEW

Seasonal from page 20

I often hear how they provide companies with a new view on how to do the work.

Seasonal recruitment is an ongoing process; employees will quit at some of the busiest times. A ready reserve of pre-qualified candidates gives you the power to react whenever turnover hits.

If you recruit seasonals at the start of the season, you will be forced to make decisions on the hiring of individuals based on immediate needs. As a result, you will not be choosing the individuals who can satisfy both your short-term and long-term needs. These last-minute hiring decisions often result in more turnover, or in choosing someone who doesn't work out. Avoid this by making the seasonal employee interviewing process a year-round activity.

What skills?—Have a job description for each position in the company. This makes assigning both seasonal and full-timers easier. It is important to let seasonal workers make decisions and assume authority and responsibility. These opportunities will help the employee become an integral part of the company.

Allowing permanent employees to make decisions will encourage the seasonal employees to speak out and know they will be listened to.

Evaluating the performance of your seasonal employees as well as your full-time employees will encourage everyone not to be concerned with job titles.

Personality matches—Choosing the individual who will work best in your company requires you to know your company's "personality." You must know this before you hire, or you may wind up with quality people who don't fit in.

For most green industry companies, the characteristics I have most observed are: competitiveness, team attitude, aggressiveness and personable nature.

Adaptability is important. Flexibility, cooperation and teamwork are the key characteristics which an individual needs to bring to the job in order to contribute to the overall profitability and effectiveness of your company.

—The author is a principle in Wandtke & Associates, a management and marketing consulting firm in Columbus, Ohio.

Ultrasonic transmitter is the smallest available

Flowline has added another sensor to its family of level products for plastic tanks.

A new electronic design offers an ultrasonic level transmitter in the smallest



package available.

The transmitter provides a two-wire, 4 or 20 mA or TTL compatible voltage signal output.

Flowline says the transmitter is excellent for difficult liquids where fouling of floats from foam or turbulence is a problem.

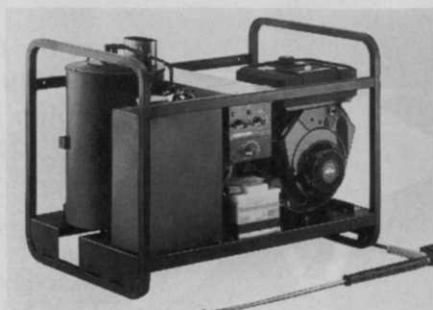
The transmitter is highly sensitive and well-suited for leak detection and point level measurement, resisting variations in temperature, light, viscosity, dielectric value and density.

Circle No. 209 on Reader Inquiry Card

High pressure washer is direct driven, skid mounted

Karcher has a new Cold-Hot Steam High pressure washer.

The direct drive, skid mounted unit is durable and designed for applications where optimum cleaning power and gasoline independence is a must.



The HDS 1200 BE comes complete with infinitely variable operating pressure, water volume temperature control, and

chemical metering.

A high-performance electric-start unit, it features a plus-90%-plus fuel efficient burner system, automatic idle down when the trigger gun is released, and low water, fuel and oil cut-off which protects the machine from damage.

Circle No. 210 on Reader Inquiry Card

Vegetation mat speeds uniform turf growth

Contractors and landscapers can achieve fast, efficient lawn growth over large problem areas by using large-sized, natural, biodegradable Futerra revegetation/erosion control mats.

To use the mats, apply seed and fertilizer to the ground and roll out the mats. After an initial watering, the mat bonds to ground contours.



Seed held in place by the mat is secured evenly over irregular terrain and protected against weeds, birds, dry spells and high volume rain washouts. The Futerra mat is made of natural wood fiber and decomposes into a healthful natural mulch to feed and nurture the emerging sprouts.

Circle No. 211 on Reader Inquiry Card

Correction

■ A product news release in our February issue incorrectly described products from Great Salt Lake Minerals Corporation as containing sodium of potash. This should have read "sulfate of potash." The products, Mini-Granular and Greens Grade Turf Blend, contribute a highly pure source of potassium, and protect growth environments from excess salt and chloride.

LANDSCAPE MANAGEMENT regrets any confusion caused by the error.

MARKET SHOWCASE

RATES: \$105 per column inch for 1x insertion; \$100 for 3x insertion; \$95 for 6x insertion; \$90 for 9x insertion; \$85 for 12x insertion (one inch minimum). Frequency based on calendar year. For ads using a Reader Inquiry Number, add \$30 to the total cost of the ad per issue. For ads using a second color standard red, blue, green or yellow only, add \$65 to the total cost of the ad per issue.

Send ad copy with payment to: Susan Ramsey, LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, Ohio 44130, or call (800) 225-4569 ext. 742 outside Ohio; (216) 891-2742 inside Ohio; FAX (216) 826-2685.

SOFTWARE

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(no commands to memorize here)



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SuperScape™

800-299-9991 or 512-452-4500

Circle No. 253 on Reader Inquiry Card

LAWN ASSISTANT

1 # 1



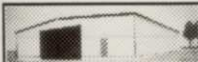
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Real Green Computers
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Circle No. 252 on Reader Inquiry Card

HELP WANTED

LANDSCAPE SUPERVISOR GROUNDS MANAGEMENT

Progressive Northern NJ Firm seeks outstanding candidate to manage 6 man crew. The right individual will possess a Horticultural degree and have 3 years hands-on experience. Excellent communication skills are required. Competitive salary and full company benefits.

Please forward resume in confidence to:
PO Box 623, Livingston, New Jersey 07039
or call Mr. Scott at 201-992-0633.

EOE M/F

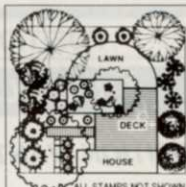
LANDSCAPE MAINTENANCE/CONSTRUCTION

Established, Full Service Landscape Maintenance & Construction Company, seeks an experienced quality-minded individual to assist in the continued growth and development of our Maintenance Division. Duties include estimating, sales and scheduling. Must have Horticultural background, sales/estimating experience and 3-5 years field experience. If you are a hard working, responsible individual, please send a complete resume along with past work history and salary to:

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Hempstead, New York 11550

Landscape
Management Market
Showcase

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Columbus, OH 43215

(614) 221-2398

Contact:

Richard P. Bersnak, President

or

Jeanne Bartkus

Circle No. 188 on Reader Inquiry Card

EQUIPMENT FOR SALE

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Lawn

HydroSeeding
Systems



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LOWEST MAINTENANCE ONLY
LONGEST WARRANTY \$169.00
EASIEST FILLING
BEST AGITATION A MONTH
FREE FREIGHT!
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BOX NUMBER REPLIES: Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, 120 W. 2nd St., Duluth, MN 55802. Please include box in address.

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FREE CLASSIFIED AD

To all "POSITION WANTED" Classified Advertisers!

- Maximum 40 words
- Maximum 2 issues

Offered as an industry service - Let LANDSCAPE MANAGEMENT help you with your employment needs. For more information contact:

Tammy Kenderes
LANDSCAPE MANAGEMENT

7500 Old Oak Blvd., Cleveland, OH 44130
216-891-2665-Phone 216-826-2865-Fax

Self motivated, conscientious, personable Horticulturist 17 years in green industry plus college seeks more than another dead end. Willing to learn and/or relocate upper Mid-west or Rockies. Contact Chris Brake, Rt. 1 Box 176, Odessa, MO 64076. (816)633-8231 evenings. 4/93

Entry level landscape architect. BSLA, July 1993. 5 years experience in maintenance, 3 years experience design/build. Knowledge of Generic CADD, Land CADD, Interior planting, basic Spanish. Will relocate. Contact Edward Clark (school), 597 Clark St., Morgantown, WV 26505, 304-291-6183. (Permanent) 201-265-9475. 4/93

Position sought that involves research, technical service, or sales with a university, or company involved in furthering the turfgrass industry through education, communication, and scientific evaluation. Turfgrass Masters, June 1993. Paul Zarlengo, 5425 Frank Ave., Canton, OH 44720, 501-443-4229. 4/93

LANDSCAPER/ARBORIST: Seeking landscape maintenance opportunity. Western Mass. Expertise in site location, nutrient requirements, disease, pest control. 18 years experience, Massachusetts Certified Arborist, Stockbridge School of Agriculture, UMass, Amherst, MA. Resumes/references: S. Nietupski, 18 Mineral St., Easthampton, MA 01027. 4/93

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ARE CHEMICALS KILLING THE CHEMISTRY BETWEEN YOU AND YOUR CUSTOMERS? If you're not growing, you might want to consider converting to or adding a NaturalLawn Franchise. We are the industry leader in organic-based lawn-care. We offer reduced franchise fees to existing businesses with a minimum of \$50,000 in existing annual lawn care revenue. **NaturalLawn® of America, 1-800-989-5444 (C).** 5/93

BUSINESS OPPORTUNITIES

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NEW/USED EQUIPMENT AND RENTALS— Asplundh, Hi Ranger, Holan and Lift-All Forestry Bucket Trucks, Chip Trucks and Chippers. Mirk, Inc., (216)669-2000, 7629 Chippewa Road, Orrville, Ohio 44667. TF

SPYDERS- New/Used/Rebuilt. Full line of replacement parts and update kits. Kubota, Ruggerini, Kohler and Onan engines and parts. Nichols-Fairfield torque hubs. We repair and rebuild Spyder hydraulic pumps and motors. **FAST SERVICE.** Call or write: Mobile Lift Parts Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. (815)455-7363, (800)397-7509, FAX (815)455-7366. 4/93

REINCO HYDROGRASSERS and power mulchers in stock. Opydke Inc., (Philadelphia Area) 215-721-4444. TF

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BUCKET TRUCK: Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

Finn Hydroseeders, Mulch Spreaders, Krimpers, Pit Burners, Fiber Mulch & Tackifiers. New & Used. **Wolbert & Master, Inc.,** P.O. Box 292, White Marsh, MD 21162. 410-335-9300, 1-800-234-7645. TF

FOR SALE

FOR SALE: JAC- E10 5 GANG BLITZER \$35,000 JAC- 3 GANG BLITZER \$1,500 TORO PACK MASTER 7 GANG MOWER \$4,500. 501-776-3802 JIM. 5/93

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MEYER Z-52 ZOYSIA SOD FOR SALE. VAMONT AND TUF COTE BERMUDAGRASS SOD. FORKLIFT DELIVERY. SERVING THE MID-ATLANTIC REGION. OAKWOOD SOD FARM, SALISBURY, MD 410-742-3086. 6/93

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LANDSCAPE MAINTENANCE & GENERAL SUPERINTENDENT: Largest landscape maintenance company in the nation seeking individuals with 3-4 years experience. Must be able to make decisions, be creative, self-motivated, organized with strong supervisory skills. San Francisco Bay Area location. EOE. Please send resume to: Environmental Care, Inc., 825 Mabury Road, San Jose, CA 95133. 5/93

SALES REPRESENTATIVE


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RATES: \$1.25 per word (minimum charge \$40). Boldface words or words in all capital letters charged at \$1.50 per word. Boxed or display ads \$105 per column inch, one time; \$100, three times; \$95, six times; \$90, nine times; \$85, twelve times (one inch minimum). (Frequencies based on a calendar year). For ads using blind box number, add \$20 to total cost of ad per issue.

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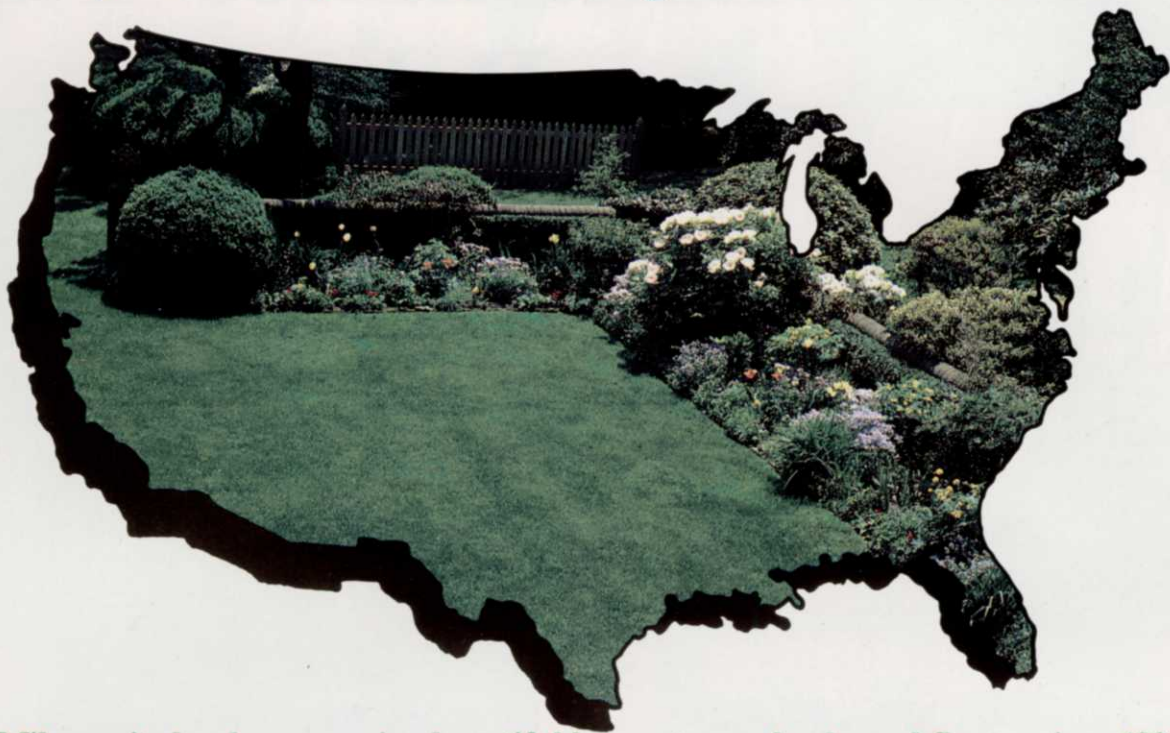
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Deerfield Beach, FL 305-652-4470

Howard Fertilizer
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Kaiser-Estech Corp.
Winter Haven, FL 813-294-2567

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Dade City, FL 904-567-5622
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Pensacola, FL 904-434-5475

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J. Molteni & Son, Inc.
Grand Rapids, MI 616-940-1441

MICHIGAN (cont'd.)
Purmenter & Andre
Grand Rapids, MI 616-458-1546

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Taylor, MI 313-291-1200
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Eagan, MN 612-454-3106

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