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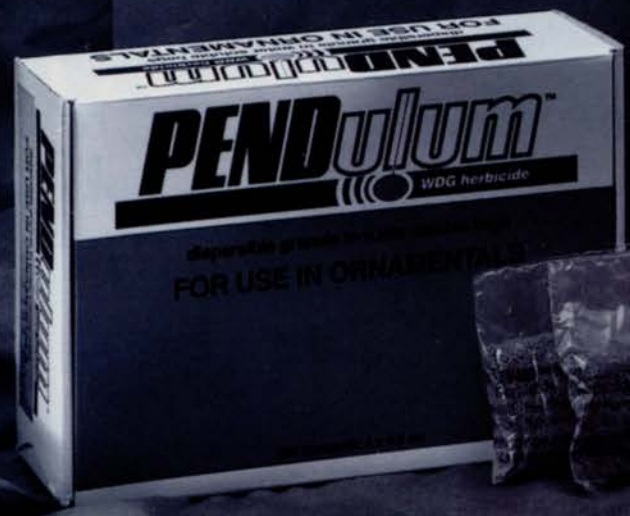
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Opportunities for attracting good foremen



Jerry Roche

JERRY ROCHE
Editor-in-Chief

No commute in southern California, you know, is a short commute.

Flagging down a Los Angeles-area taxi cab not long ago, I thus had the opportunity to engage the driver in a desultory but rather lengthy conversation.

He's 30 years old if he's a day, and a college graduate, I come to find. As a matter of fact, he's got his master's degree in business administration from a prestigious East Coast university whose name you'd recognize. The reluctant cabbie had moved to the West Coast months ago, seeking gainful employment in his area of specialization, eager to lend his services to the highest bidder.

Unfortunately, the highest bidder was the local cab company—a sad reflection on the tight job market in Los Angeles that also applies to the market in the green industry and other industries.

Just over the past few months, Americans have started to question the validity of some government statistics. Unemployment, President Clinton contends, is very low, and more Americans now hold jobs than ever before.

What the statistics *don't* say is that large corporations like AT&T are laying off skilled workers in droves, that callous major employers are behaving as if the country's human resources are mere pawns in a chess game where the prizes are increasing corporate profits and skyrocketing stock market prices.

Which, if the national news magazines are to be believed, is true. A recent edition of *Time* noted that the rich are getting richer, the poor are pretty much staying poor, and the middle class is edging ever so precipitously downward.

In a recent survey conducted by LANDSCAPE MANAGEMENT, "finding middle managers" was one of the problems most cited by our readers. Might this be, then, an opportunity for green in-

dustry employers?

If there are truly uncounted, intelligent masses unable to find work in their area of expertise, might they be willing to settle for something less? A job, perhaps, that would be out from under the confining walls of their latest corporate experience, where they could take a deep breath and not gasp at recycled air? A job that offers opportunities to excel by innovation, to lead by example, to develop both mind and body equally?

No, the new level of employee wouldn't be making \$60,000 or \$70,000 a year. But with your understanding and assistance, they could make a good living and savor at least some of the benefits of their previous job.

And, yes, you would have to pay a premium for the educational level of this burgeoning workforce. But you might not have to break the bank.

Don't get me wrong here, readers. This is not a perfect fit by any means. But if the employment market continues to dictate further "downsizing," "out-sourcing" and other various fancy names for workforce cuts—and if you can offer the slightest incentive for coming to work in the green industry—you might be surprised at the kind of quality employees that are available.

Certainly, many of those middle managers laid off by our corporate giants might want to work for a smaller organization, where they are on a first-name basis with the top guy. Where they'll be fairly sure that their employer will remain loyal to them, as long as they meet their job-related responsibilities.

Just because they are beating the bushes for jobs, however, these exceptional people will not casually gravitate to the green industry without a proper introduction. You'll have to recruit, and you'll have to tell your story.

What can you do to attract this new generation of middle manager? Will a little extra incentive make a great difference in your profitability and/or efficiency?

Next time you're in a taxi cab, maybe you should ask. **LM**

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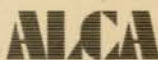
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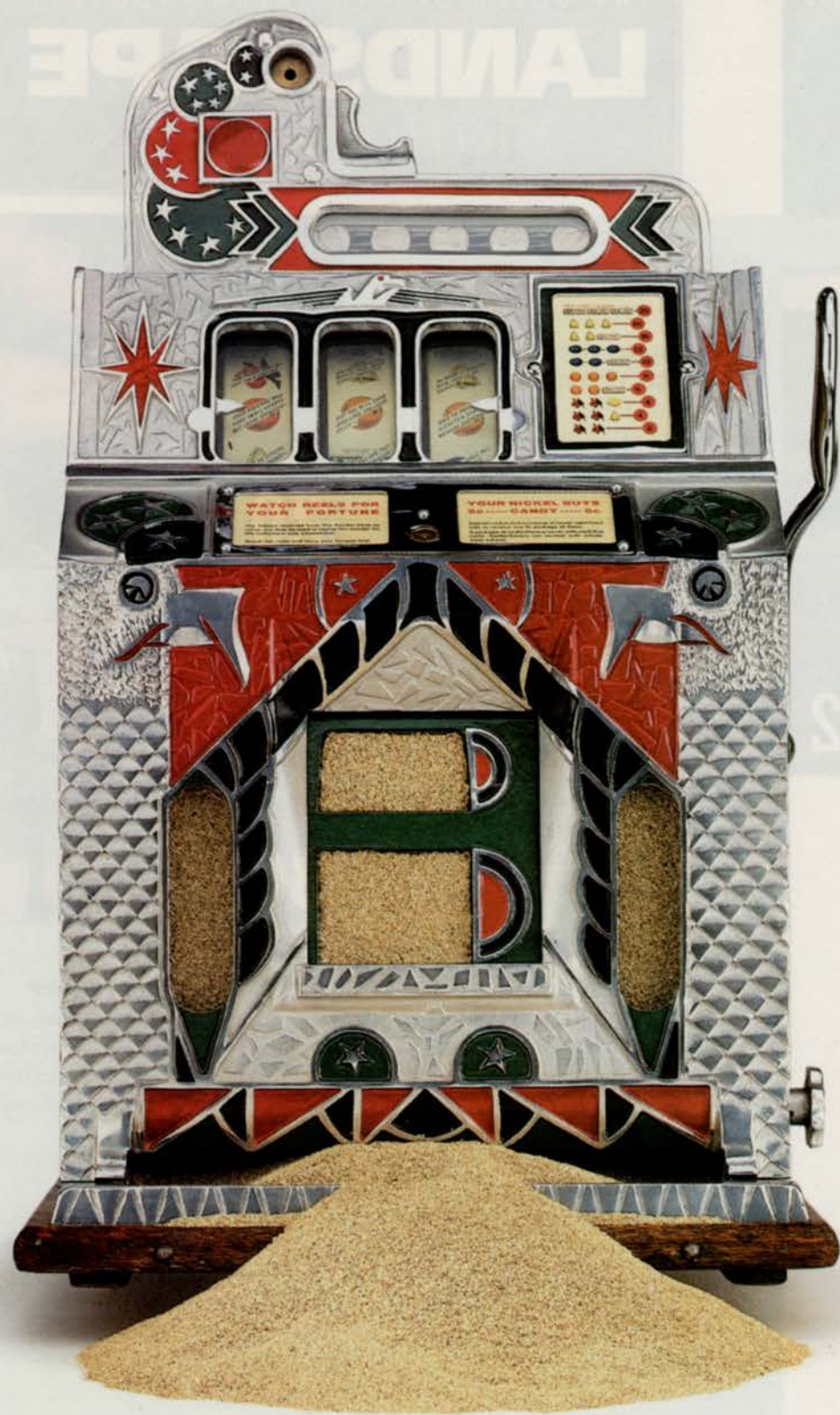
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THE VOICE OF THE GREEN INDUSTRY

LANDSCAPE *management*

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Our national government seems to be devoting almost all its energy to positioning for the 1996 Presidential election. That leaves little time to attend to issues that might affect the green industry. Nonetheless, here's what's going on in Washington, D.C., with a complete chart on pertinent proposals, and how they would affect your lawn care operation.

RON HALL



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Tree pruning is one of the most labor-intensive green industry jobs. It's essential that your tools are lightweight and easy to use.

TERRY MCIVER

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The shocking truth

What kind of trees are more or less prone to lightning strikes? Are hemlocks often hit? If we have a group of large oak trees on a golf course, do we need to install lightning protection on every tree? Once installed, how many years is the tree protected?

—ILLINOIS

Lightning is most likely to strike the following trees:

- ▶ a lone tree
- ▶ the tallest tree of a group
- ▶ a tall tree at the edge of a grove or at the end of a row
- ▶ trees closer to a body of water such as a lake, pond, river or stream
- ▶ trees growing in moist soils

▶ trees close to a building

Deep-rooted trees appear to be more likely targets than shallow-rooted trees. Although not much research has been conducted, it is believed that trees such as ash, maple and oak—with their high starch contents—are better conductors than trees such as beech and birch, which contain a higher concentration of oils in their tissues.

The following trees have been reported to be hit by lightning more often than others: maple, ash, tulip tree, pine, spruce, sycamore, poplar, oak, hemlock and elm.

Trees such as chestnut, birch and beech are struck less often than average.

In a group of large trees—oaks in a grove, for example—generally only the taller trees need to be protected.

Lightning protection systems should be inspected during every dormant season. The air terminals may need to be raised every two to three years, or as needed. Make sure that a single, 32-strand copper (17 gauge) conductor is attached to an air terminal (tree point), installed in the highest part of a tree and then fastened along the trunk down to the ground connec-

In a group or grove of large trees, generally only the taller trees need to be protected.

tion. If the crown is round or globe-type, install several small air terminals and conductors in the highest parts of the main branches. Each conductor should be extended along the trunk, about one foot below the ground and out to the drip line of the tree or about 25 ft. from the trunk, whichever is farther.

Drenching for diseases

Can we mix Chipco 26019 to control Rhizoctonia sp. and either Subdue or Aliette to control Phytophthora sp.? We would like to drench trees with fungicides at the rootzone. The trees are growing in heavy clay covered with mulch.

—WASHINGTON

You can mix either Subdue or Aliette with Chipco 26019 for broad-spectrum disease man-

agement. Make sure that the *Rhizoctonia sp.* and *Phytophthora sp.* you mentioned are listed as disease-causing agents. Sometimes, it is possible to detect non-pathogenic forms of fungal agents which may not require a fungicide treatment. However, if you have a laboratory to diagnose the problem from a suspected tree, then it would be all right to use the fungicides. Otherwise, you will be using the fungicide for insurance's sake, not knowing whether or not the fungal species is a disease causing species.

If you are planning to use these fungicide combinations on a program basis, consider the following possible option:

First, use Chipco 26019 + Aliette fungicide in combination. A month later, use alternate combinations of Chipco 26019 + Subdue. Where feasible, it is advisable to provide a third treatment one month after the second treatment, using the Chipco 26019 + Aliette combination.

On the other hand, if you prefer, you can start with a Chipco 26019 + Subdue combination first, followed by Chipco 26019 + Aliette one month later, and again use Chipco 26019 + Subdue for the third treatment. With this program, your objective is to alternate the fungicides to obtain better results. **LM**



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Floods, herbicides conspire to threaten '96-97 seed supply

by TERRY McIVER / Managing Editor

Ten to 30 percent of the 1996-97 tall fescue and perennial ryegrass seed crop will be lost due to winter floods and residual herbicides which killed grass plants that sprouted during a fall warming spell. The shortage could frustrate what is expected to be high demand for turfgrass seed in the fall of 1996.

Unseasonably warm weather caused late-sprouting plants to be killed by herbicides that were intended to remove seed remnants from the 1995 harvest. Severe flooding in early February capped off an unfortunate turn of events in an industry that prefers its plagues one at a time. Older ryegrass fields—those planted to ryegrass for the past three or four years—took the most damage.

"Generally, the 'volunteer' seedlings—the worthless sprigs that sprout after the seed harvest—are all that need to be controlled

by field burning, or—since field burning has been limited—by herbicides," explains Dr. Jerry Pepin of Pickseed West. Under normal conditions, the herbicides will not kill the established plants.

"I'm sure everybody used the recommended rates, but the recommended rates are for a certain set of conditions. This year, the herbicides just

worked much more effectively."

Adds Dave Nelson of the Oregon Fine Fescue Commission: "[The shortage] could be 10 to 15 percent. We won't know until the harvest. It could well be 15 to 30 percent."

Mike Robinson of Seed Research of Oregon says he is seeing a three percent loss of crops to floods, but "there will be a reduction of at least 30 percent...on the perennial ryegrass fields...especially on the older fields" because of herbicide damage.

"Another concern," Robinson points out, "is that some of the fields continue to show increased damage—the chemical is still working."

According to Nelson, perennial ryegrass—and to a lesser extent, tall fescue—is sold out for the 1995-96 season. Additionally, says Nelson, some seed companies were unsuccessful in planting sufficient tall fescue and perennial ryegrass acreage in the fall, largely due to competition from high-priced wheat crops.

Tom Stanley, marketing manager for Turf Seed, says water overflowed the banks of the Willamette River by 20 feet or more.

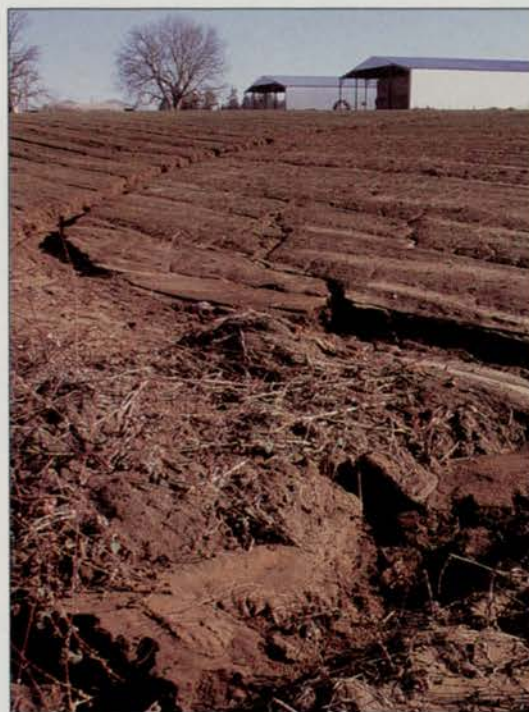
Higher prices

"Because the Oregon seed industry had massive carry-overs for the last three to four years, they cut back acreage to reduce inventory," says Stanley. "Turf-type tall fescue prices have gone wild, and there's not going to be enough to go around." He believes that prices for tall fescue and perennial ryegrass next year will be 25 and 15 percent higher, respectively.

"We're going to be short for another couple of years," says Nelson, who suggests that green industry seed buyers get their 1996-97 orders in as soon as possible. □



Pepin: Weather conditions a factor in control product efficacy.



Flooding through Oregon's Willamette Valley reduced portions of seed fields to bare ground.



Stanley: Seed prices are likely to rise.

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Harsh winter means probable turf damage

Although the Blizzard of 1996 has gone, the amount of damage this extreme winter did to home lawns is still unknown.

Ohio State University turfgrass specialist Joe Rimelspach says you should be on the lookout for snow mold in lawns this spring, especially where snow has drifted or been piled up by plows.

Slimy, circular patches from two inches to a foot in diameter are the distinguishing mark of snow mold damage, Rimelspach says. Sometimes the patches overlap, creating the illusion of extensive damage. Patches begin as a light yellow-green color, become bleached white, and

progress to a tan or brown over time.

Though the damage is cosmetic, Rimelspach recommends lightly raking the dead patches to break up crusted grass and let air and light get to the crown. Fungicides rarely cure the problem, but affected areas should be treated in the fall so the snow mold does not occur again next season.

Other possible problems associated with hard winters, according to Rimelspach:

1) **Salt injury along streets, driveways and walks:** Check the base of the plants for growth once the rest of the lawn starts

growing. If the plant is dead, the only solution is to resod or reseed.

2) **Traffic:** The chances of long-term injury from foot traffic is minimal when the ground is frozen. But if it's covered with slush and then the ground freezes, turf crowns and stolens can be extensively damaged and the chance of recovery is usually poor.

3) **Ice cover:** Thick, clear ice is much more damaging than porous white ice because it seals out oxygen. Turf can survive periods of ice cover longer if it is cushioned by a layer of snow between it and the ice.

4) **Frost heaving:** Reduce heaving by mulching areas seeded in the fall. Roll the lawn just after heaving occurs to press turf roots back into the soil and reduce wind damage. □

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Dodger Stadium goes with 'Prescription' turf

The Los Angeles Dodgers will begin the 1996 baseball season at Dodger Stadium in Los Angeles on the most advanced natural athletic turf system in operation today, according to The Motz Group, which owns the license on Prescription Athletic Turf (PAT).

The installation, which began in November, was due to be completed this month.

"The entire field has not been replaced since Dodger Stadium opened," notes Doug Duennes, director of operations for Dodger Stadium. "The new technology is extraordinary and we believe that it is time to make a change...that will be pleasing to both our fans and ballplayers."

On the surface, the new PAT system provides a level, bermudagrass playing field that is grown on pure sand. Below the surface, the system has a vacuum chamber connected to a drain line matrix that is laid over a water-tight plastic barrier. During heavy rains, water is forcibly extracted from the field profile. A computer controller and moisture gauges automatically track water levels and transmit data to a microprocessor that initiates drainage.

The system can also subirrigate the field when moisture readings drop below optimal levels.

"Given the arid climate of southern California, the system's water conservation technology is a very important asset for the Dodgers," says Joe Motz, president of The Motz Group, which also recently installed PAT systems at Joe Robbie Stadium in Miami and at the University of Virginia's new David A. Harrison III Field. □

Expo 96 has ideas to 'grow your business'

The International Lawn, Garden and Power Equipment Expo (Expo 96) will feature a series of Professional Landscape Seminars, including an "Ask the Pros" panel, "Growing People Who Grow Your Business" and "Technology You Can Use to Grow Your Business." Total cost for the seminars is \$25.

The event will be in downtown Louisville, Ky. at the Commonwealth Convention Center. Free shuttle service will be provided from most Louisville hotels.

The annual trade show, scheduled for July 28-30th at the

RISE gets new state government manager

Fred Langley has joined RISE (Responsible Industry for a Sound Environment) as manager of state government relations.

He works on a consultant basis to monitor and analyze state legislative and regulatory activities, testify on behalf of RISE, build coalitions and provide regular updates to members.

Langley was eastern region government relations manager for DowElanco and is an arbitrator for the American Arbitration Association. He is now available to address state pesticide issues of concern to green industry professionals: 17 Tidewater Farm Rd., Greenland, NH 03840; phone (603) 430-8907; fax (603) 430-8906; e-mail langleyf@ix.netcom.com. □

Trend toward total renovation on golf courses

The next few years will see many historic, established cool-season golf courses renovate their greens to the new elite creeping bentgrasses now entering the marketplace, believes Lofts Seed turfgrass breeder Dr. Richard Hurley.

Two cases in point are The Desert Inn in Las Vegas and Wilmington (Del.) Country Club. The Desert Inn course, which used Crenshaw bentgrass on greens and washed sod, wanted something to hold up to 250 rounds a day and the city's extreme heat. Dan Pierson at Wilmington renovated 18 greens by sterilizing the soil surface in early September, 1994, then sowing bentgrass seeds in the middle of the month.

Superintendents are discovering that they do not have to continue to put up with older greens that do not hold up as well against disease problems as the new, improved varieties, says Hurley. □

Kentucky Exposition Center, is free to pre-registrants.

New country music superstar Martina McBride will sing at the Expo's annual dinner/concert on Monday, July 29th. The Drifters—whose song "Under the Boardwalk" was one of the great hits of the early 60's—will also perform.

"With a bargain ticket price of just \$35 for the concert and buffet dinner, this is an outstanding opportunity to enjoy an industry event," says Dennis Dix, president and CEO of the Outdoor Power Equipment Institute, Inc.

To receive a free copy of the Expo 96 registration brochure, call (800) 558-8767—(502) 562-1962 in Kentucky. Fax number is (502) 562-1970. **LM**

[DRUG PROBLEMS]

by JERRY ROCHE / Editor-in-Chief

"Hung-over employees have caused problems ranging from simple tardiness to embarrassing the company, and even destroying equipment. I've seen hung-over employees throw up on a customer's front lawn while raking leaves. I've watched a hung-over employee back the truck through the wall of the garage. I attribute problems like forgetting to latch the pintal hook for the trailer and crashing mowers into cars, buildings and flowerbeds to hung-over employees."

Like the diseases you control in turf-grass, the diseases of drug and alcohol addiction are easier to handle on a preventive rather than a curative basis.

This is what readers who responded to our February "Talkback" seem to think, anyway.

"Like many problems, they're easier to prevent than to repair," notes Bill Wattendorf of the Grass Man Lawn Care Co. in Brant Rock, Mass.—who also wrote the introductory paragraph to this article.

"I check up on an employee's personal background extensively before hiring him or her," Wattendorf writes. "I put a lengthy explanation of my drug/alcohol policy in the employees' handbook. Strict intolerance of possession or use of alcohol or drugs is clearly explained."

Chuck Twist of TNT Lawn & Landscape Management Co. runs his business in a college town, "so there's lots of partying.

"Our help-wanted ads say, 'must be able to pass drug screening,'" Twist notes. "This brings us about half as many applicants as before. So far, we never have implemented any drug testing, but it keeps the 'dopers' away."

Tom Shackelford of Shackelford Landscape & Lawn in Anaheim, Calif., uses two preventive measures—drug screening and pre-employment evaluations—and one curative measure—"employee rehab through the insurance company" to control drug and alcohol abuse.

"Employees 'under the influence' mean poor productivity, unnecessary financial bills and loss of business," Shackelford writes.

Regulations for government workers, generally, are much stricter than in the private sector. Dale W. Ivan of the Moses Lake (Wash.) Parks and Recreation Department says tough new laws "get people's attention quick." Moses Lake has had a written policy and has random drug/alcohol testing procedures.

"In the parks department," Ivan continues, "we have a core of good full-time folks. We have been very fortunate to not have had any incidents related to drugs on the job. Over the past five years, there were two part-time folks with a first-time DWI that couldn't drive for a few weeks. This happened after hours. We worked with them through the problem."

Jim Haines of National Turf in Newport News, Va. has a little talk with first-time offenders. "They are given 30 to 45 days, during which an unannounced re-test is given. They do not operate equipment until after the new test, and if they fail, they are fired."

The people who responded to our February article report an average of one drug- or alcohol-related incident in the past 12 months and five in the past five years.

One landscaper wrote that he's had

three problems in five years, each of which was "cured," one way or another: one employee went into rehab, one quit and one was fired. These are the normal alternatives.

One golf course superintendent who wished to remain anonymous wrote:

"Our long-term conscientious employees quickly allow us to know when job performance is hurt because of drugs or alcohol. Our dependable employees will not long stand for others being 'under the influence' and, of course, management will not, either. So this incompetent type of worker is soon gone."

Robert J. Shoen of Burlington Country Club in Mt. Holly, N.J. demands a hiatus from drinking or doing drugs 11 hours before employees are scheduled to work.

"If, for instance, employees know that they are working Monday, they then must put the drugs and/or alcohol down 11 hours before work. If they can't schedule their recreation around work, they are not responsible enough to work for me," he writes.

Ken R. Meredith of Harbour View Golf Complex in Little River, S.C. believes in rehab. "But it will only work when the person has a strong desire to stop," he writes.

—Thanks to all who contributed. The nine respondents quoted in this article will receive free LANDSCAPE MANAGEMENT painter's caps.



Via mail, e-mail, fax, etc.

No throw-away

To the editor:

Finally, after years of throwing the trade mags in the magazine rack due to lack of good, solid information, I can enjoy this one. The November, 1995 issue was loaded with good tips for this 11-year warrior.

I look forward to next month and intend to follow some new paths due to an article or two. Thanks.

Shawn Wakefield
Wakefield Landscape
Auburn, Calif.

(Shawn: Ahhhh. Like the homeowner or golfer who gushes over the property, it's comments like this that keep us editors going every month.)

Editors' choice?

To the editor:

Referring to your article in the February '96 issue of *LANDSCAPE MANAGEMENT* "Editors' Choice: Products for 1996," you made the statement that the Groundtek Lady Bug is "neat." It seems to me that this machine compromises operator safety.

The spray boom is in front of the operator, subjecting him/her to spray drift. The rotary spreader is in front of the operator as well, subjecting him/her to fertilizer dust or—even worse—chemical dust in the case of combination products. Mounting these behind the operator seems like a much safer way to go.

As a golf course superintendent, I am very aware of the safety concerns the public has regarding pesticide usage and the importance of having professionals apply these products. This machine does not look very professional to me.

I am very interested in hearing your comments regarding this.

Larry Livingston
via e-mail

(Larry: George Bori, general manager at Groundtek, addresses your concerns about the Lady Bug:

"There is a safety shield behind the spreader, and—as always—it's suggested that the operator wear the proper clothing and respiration equipment.

"The sprayer works with a low rate of pressure—10 psi—at the boom, and the special nozzles we use are low to the ground. The sprayer is also angled for good coverage, and the boom is so close to the operator that, as you travel forward, the product goes away from you. So drift is practically non-existent. You should, however, make sure to use quality materials with low dust to further reduce any potential problems.

"Obviously, if there was a problem, I wouldn't have large companies interested [buying] in the unit.")

Events

MAY

3-4: Homestead International Plant Show, Youth/Fair Expo, Miami, Fla. Phone: (305) 246-2113.

6-8: Southeastern Turfgrass Conference, Tifton, Ga. Phone: Jeanne Werner, (912) 386-3416.

7: Outdoor Power Equipment annual meeting of the Certification Test Committee and Engine & Equipment Training Council, Irving, Texas. Phone: Tom Kane, Kubota Tractor Co., (310) 370-3370.

7-11: International Society of Arboriculture Western Chapter annual conference, Hawaiian Regent Hotel, Honolulu, Hawaii. Phone: (916) 641-2990 or Roger Garrigue, (818) 246-5260.

20-21: Developing a Golf Course Community seminar, Buena Vista Palace, Orlando, Fla. Phone: (800) 999-3123.

23-25: People/Plant Interactions in Urban Areas symposium, San Antonio, Texas. Phone: Dr. Jayne Zajicek, (409) 845-4482.

27-June 11: Garden Tour of Scotland. Phone: (800) 757-0404.

29-June 1: American Association of Botanical Gardens/Arboreta annual conference, St. Louis, Mo. Phone: Kate Broniflawski, (610) 688-1120.

29-June 5: International Plant Propagators' Society meeting, Buenos Aires, Argentina. Phone: Jim Booman, (619) 630-4170.

30-31: Elements of Color; Color Magic conference, Inn at Maingate, Kissimmee, Fla. Phone: Merry Mott, Florida Nurserymen and Growers Association, (800) 375-3642.

30-June 1: American Horticultural Society annual meeting, St. Louis, Mo. Phone: Bridget Flint, (703) 768-5700.

31-June 2: Christmas Decorating Conference, Pittsburgh. Phone: Kathy Pizon, Plantscape, (412) 281-6352.

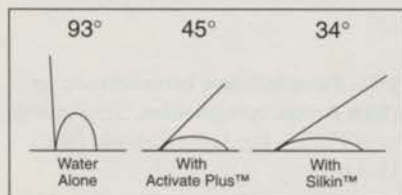
Using Adjuvants In Your Plant Protection Program

Here's how adjuvants can improve the performance and coverage of your plant protection product applications.

Using adjuvants in your turf management program can help you improve plant protection product performance. They can even make the difference between peak and poor performance. The starting point is to find the right adjuvant for the job. The most commonly used adjuvants for turf are: wetting agents; spreader/stickers; spreader/activators; sticking agents, and buffering and compatibility agents.

Wetting Agents

If you've been making thorough herbicide, fungicide and insecticide applications but still aren't getting the control you expect, your plant protection product may not be penetrating plant tissue surfaces. This reduces control and leaves spray residue susceptible to wash-off. The wetting agent Riverside® Silkin™ helps sprays penetrate plant tissue quicker for improved overall performance.



The wetting agent Riverside Silkin and spreader/activator Riverside Activate Plus™ reduce surface tension of spray so that it forms "flatter" droplets, improving coverage and absorption.

Spreader/Stickers

Good control in some areas and poor control in others could mean drift and wash-off are taking their toll on spray performance. During application, spray droplet size varies, reducing adhesion and causing spray to miss the target. To improve coverage and adhesion, use the spreader/sticker Riverside Complex™. It adjusts droplet size for better performance, even under adverse conditions. By reducing surface tension in the spray droplet and keeping the spray mixture suspended, Complex can dramatically improve the efficiency of herbicides, fungicides and insecticides.

Spreader/Activators

Droplet size varies during applications, making retention and distribution more difficult. Spreader/activators work in much the same way wetting agents

do. They deliver more uniform droplet distribution, quicker wetting and increased spray retention on leaf and stem surfaces when used with herbicides, fungicides and insecticides.

The spreader/activator Riverside Activate Plus improves performance and efficiency by moving the spray into plant tissue more quickly. By speeding up penetration, you get increased pest control.

Sticking Agents

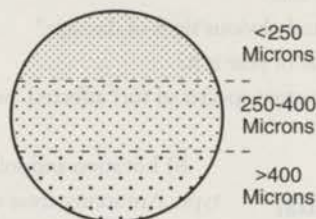
Contact herbicides, and non-systemic fungicides and insecticides can sometimes be washed away by rain, irrigation or even dew. Plant protection product sprays are also affected by drift. The sticking agent Riverside Plex® helps plant protection products penetrate the vegetation canopy and stick to plant tissue. That also helps control drift. Using



Riverside®
Adjuvants
Maximize Your
Pest Control.

Plex will help you make applications that will last longer, even in wet conditions.

Approximate Actual Size



Spray droplets under 250 microns are susceptible to drift and poor coverage. Using Riverside Plex or the spreader/sticker Riverside Complex to control droplet size effectively controls drift and

improves coverage. Both maintain droplet size near 400 microns, ideal for the best application.

Buffering and Compatibility Agents

If you're not getting the control you want but have followed label directions to the letter, it could be a pH problem in your tank mix. The buffering agent Riverside Combine® will help you correct the pH level for maximum performance from your spray mixture. If you're unsure of your pH level, use a pH test kit or, if you don't have one, contact your Terra representative.

Combine® pH use chart.

		Starting pH			
		9	8	7	6
Desired pH	8	2	0	0	0
	7	4	2	0	0
	6	16	12	8	0
	5	20	16	12	8
		Oz/100 gal. water			

A chart like this one makes it easy to adjust pH level for optimum results. For example, if your desired pH is 7 and your starting pH is 9, you would need to mix 4 ounces of Combine per 100 gallons of water to get the proper pH.

In addition to buffering, Combine also works as a compatibility agent. The compatibility agent Combine should be used when: more than one plant protection product is included in a tank mix; when tank mixing different formulations like wettable powders and liquids; or when applying micronutrients or plant protection products with fertilizer. Also, Combine improves spray mix stability and dispersion.

To see if a compatibility agent will help your tank mix, try the jar test. Fill two quart jars each with a pint of water or carrier. Use the same source and temperature as you would in your actual tank mix. Mark one jar "with" and one "without." Add 1/4 teaspoon of Riverside Combine to the jar marked "with" and shake it gently for 5-10 seconds. Add the plant protection product(s) to both jars in the proper volume and sequence according to the label directions. Shake gently before adding each new product. Wait 5-10 minutes. Check both jars. If no gels, sludge, flakes or other irregularities are present, the mix is compatible.

If the jar marked "with" is compatible and the jar marked "without" isn't, a compatibility agent should be added to your tank mix. If the jar marked "with" isn't compatible, the tank mix shouldn't be used.

Wait 30 minutes. If the mixture separates but readily mixes again, the tank mix can be used with proper agitation.

Adjuvants Pay Off

Overall, adjuvants can help you protect the investment you make in plant protection products by making them more effective. Whether you're using wetting agents, spreader/stickers, spreader/activators, sticking agents, buffering and compatibility agents or all five, they can help you overcome some of the common problems faced by turf professionals.

For more technical information on adjuvants, contact your nearest Terra Professional Products representative.



Get maximum plant protection product performance with Riverside® adjuvants. They make spray mixes work harder, perform better and control more.

Adjuvants help you get the most out of your program and protect your plant protection product investment at the same time. Riverside adjuvants make the difference between a good job and a great job. Use them with your spray applications to maximize performance.



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Follow the clues to identify pests

Turf managers who seek to classify insect pests must follow the clues and use the process of elimination.

by PATRICIA J. VITTUM, Ph. D./
University of Massachusetts

The keys to successful insect control are: (1) identifying the pest insect; (2) determining when the insect will be in its most vulnerable stage for control; and (3) choosing an insecticide which is best suited for the conditions.

The clues

- 1) Are there any insects in the area?
- 2) What do they look like? Insects are able to damage turf when they are in both the adult and immature stages.
- 3) Are these insects active in the daytime or only

at night?

- 4) Are they found near the surface, well into the thatch or in the soil?
- 5) Do you find obvious signs of damage?
- 6) What time of year is it?
- 7) Are just certain species of turf affected, or all species?

8) Location and soil type. Are sunny areas or slopes affected. How about sandy soils?

For example, several species of sod webworms

damage turfgrass throughout the northern half of the United States. The adult moths have tube-like mouthparts which are projected forward. The moths often fly just above the turf at dusk, looking for places to lay eggs. The caterpillars, which often are gray, green or brown and have dark spots scattered over their bodies, stay hidden in the thatch during the day and feed at night. The first visible damage is as small, brown or yellow patches, which grow larger over time, and is most evident during the summer months.

Biological controls

Most healthy turf settings have natural predators or parasites which provide some level of natural control. Birds, skunks or raccoons often scavenge for insects in turf. In addition, there are numerous predatory insects—such as ants, ground beetles, lady beetles and spiders—to feed on pest insect eggs and small larvae.

Some parasitic insects lay eggs on or inside the bodies of pest insects. The young larvae hatch out and feed on the internal tissue, eventually killing the host. Unfortunately, most of these predators and parasites are very sensitive to many of the broad spectrum insecticides used in turf settings, so when we apply an insecticide to control a pest insect, we often also kill some of the beneficial insects.

In recent years, several biological control agents have been developed commercially, which can be applied to turf settings to reduce insect pest populations.

Bacillus thuringiensis is a bacterium which paralyzes the target insect's gut system. This bacterium exists in several different strains, each of which is effective against certain kinds of insects. *Bt var.*

Sample the soil

Turf managers in cool-season locations should know at least three sampling techniques for measuring insect populations.

1) A soil sample is used to scout for white grubs. Dig a square six inches square, and about four inches deep. This is equal to 0.25 square feet, so four samples equal one square foot.

Turn the sample upside down on a piece of plywood and use a small trowel to break up the soil and dislodge it from the thatch. Remove any white grubs and place them in a small dish or pan until they can be counted. An alternative is to use a cup cutter to remove a 4.25-inch diameter core and inspect the soil in the core. The area happens to be 0.1 square ft.

2) Flotation, or flooding, is used to sample for chinchbugs. Remove both ends of a

coffee can, and insert it into the soil to a depth of at least two inches. Fill it with water. Within two or three minutes, insects which were trapped inside the can will float to the surface, where they can be counted.

3) A soap flush can be used to sample for cutworms or webworms. Add one or two tablespoons of a lemon-scented dish detergent to one or two gallons of water and spread the frothy mix over an area two feet per side.

Caterpillars and earthworms will be irritated by the solution and will wriggle to the surface where they can be counted. Do not use this test when the turf is under drought stress; do not use on short-cut bentgrass during heat of the summer unless you can rinse the area with straight water after the test. The soapy water serves as a magnifying glass and can burn the turf. □



Japanese beetle grubs feed on turfgrass roots, causing considerable damage.

kurstaki—available as Dipel, Javelin, Steward; all trademarks—is used to control caterpillars in turf and ornamentals, as well as in fruit and vegetable production. *Bt. var. israeliensis* is used to control mosquito populations in aquatic settings, and to control fungus gnats in greenhouses. A newly-discovered strain, *Bt. var. japonensis*—of the strain *buibui*—looks to hold some promise for white grub control.

Entomopathogenic nematodes, which cause diseases in insects, can be applied to turf with standard hydraulic sprayers. These nematodes, available as Vector, BioSafe and others, can move short distances in search of their intended victims. The nematodes are sensitive to cool or cold temperatures, and are sensitive to desiccation, so applications must be watered in immediately.

Some perennial ryegrasses and fescues contain endopytes-fungi growing inside the plants—which provide a level of resistance to certain kinds of insects such as chinch bugs, greenbugs, webworms, cutworms or billbugs. These cultivars also tend to be more drought tolerant. So in areas where these insects have been a problem, consider renovating the areas using endophytic grasses.

One chemical product consideration is speed of efficacy, or how quickly the product works. Proxol, Dylox and Triumph begin to affect target insects within a day or two after applications, while others, such as Oftanol and Merit, may take two or three weeks before target insects begin to die.

If an application is made when most of the target insects are very small and there is a chance that some of the eggs have not yet hatched, you should use one of the slower-acting but longer-lasting materials, such as Oftanol or Merit. If an application is made when most of the target insects are already quite large and feeding actively, you probably should use one of the faster-acting ma-

Insects and their treatment

White grubs: Feed on roots of turf-grasses. Turf looks like it is in drought stress.

Cultural control: provide adequate moisture to root zone. Do not mow too low.

Biological control: *Bacillus thuringiensis var. japonensis* strain *buibui* (may be available in 1996. *Heterorhabditis bacteriophora*, certain strains (entomopathogenic nematode).

Chemical: Use products which penetrate thatch well (Dylox, Proxol, Triumph) in areas with more than 0.25 inches of thatch. Merit works very well but must be applied before most of the population is in the middle-sized grub stage. Water any material in as soon after application as possible to improve contact with grubs.

Chinch bugs: Suck plant juices from stems. Usually most severe or noticeable in sandy soils or sunny areas. Usually most active in summer months.

Cultural control: reduce thatch. Avoid drought stress. Use endophytic grasses.

Biological control: Watch for big-eyed bugs, which are natural predators resembling chinchbugs.

Chemical control: Many turf insecticides are labelled and effective. Consider using products that will remain in thatch (e.g. Dursban). Apply in late spring or early summer, if sampling documents need.

Billbugs: youngest larvae feed inside stems. Larger larvae feed near crown of plant and on roots. Areas turn yellow or brown and die. Perhaps the most misdiagnosed turf insect problem in the Northeast.

Cultural controls: Use endophytic grasses.

Biological controls: *Steinernema carpocapsae* (available as Vector, BioSafe and others); an entomopathogenic nematode; water in immediately after application.

Chemical control: Most applications are directed toward adults as they begin to lay eggs, often May or June. Timing of application appears to be critical, and the application window is only two weeks in some areas.

Webworms, cutworms: Caterpillars hide in thatch during the day and feed at night on tender tissue.

May thin or kill patches of turf. Several species, often several generations per year.

Cultural control: reduce thatch, avoid drought stress and use endophytic grasses.

Biological control: *Steinernema carpocapsae* (available as Vector, BioSafe and others); an entomopathogenic nematode. *Bacillus thuringiensis var. kurstaki*, available as Dipel, Javelin, Steward and others.

Chemical: many turf insecticides are labelled and effective. consider using materials which remain in the thatch (e.g. Dursban) or some of the relatively new pyrethroids. Treat as late in the day as possible. □



Chinch bug damage is most severe in sandy soils or sunny areas.

terials, such as Proxol, Dylox or Triumph.

Some materials, such as Dursban, are tied up in the organic material in the thatch, and are less likely to penetrate the thatch and reach the rootzone. Such materials are usually very effective against some of the surface feeding insects (cutworms, webworms, chinch bugs), but are not as effective against root insects (white grubs) when used in areas where there is measurable thatch.

Some materials such as Proxol or Dylox are quite soluble in water and move through the thatch quite readily. These materials are good choices for control of white grubs and other soil insects because they can penetrate the thatch, but may be

less well-suited to control surface feeders.

Some insecticide applications should be watered in immediately after application, often to help move the material through the thatch toward the rootzone and to draw the target insects up into the thatch. Other applications should not be watered in or should receive only small

amounts of water to move the material off the blades and into the upper thatch. Some materials (for example, Proxol, Dylox, Orthene, Triumph) break down very rapidly when the water pH is greater than 8.0 alkaline.

Most field trials seem to indicate there is no consistent or measurable difference between formulations of the same material. In other words, if a turf manager decides to use "chemical x," the sprayable formulation and the granular formulation should provide the same level of control.

New materials

Several insecticides have been available to the turf market for only a year or two, and turf managers are still experimenting

with their use.

Merit has proven to be very effective, particularly on several species of white grubs. However, as with any insecticide, you should resist the temptation to rely on Merit alone, but include that material as one of several in the arsenal.

Several synthetic pyrethroids, such as Tempo and Talstar, have received turf registrations in the past couple of years and appear to be quite effective against a range of surface insects.

Another compound which has been tested in university settings for several years and appears to be nearing registration is *halofenozide* (referred to as RH-0345 in most trials). This compound is an insect growth regulator which prevents the target insect from molting from one immature stage to the next. It is relatively specific to certain kinds of insects and has a very low level of toxicity to other organisms such as people, birds, fish or other vertebrates. It looks promising against several species of white grubs. The compound may not be registered in 1996, but should be registered in 1997 and will be a welcome, environmentally-favorable compound for turf insect control programs.

The keys to successful insect control are: (1) identifying the pest insect; (2) determining when the insect will be in its most vulnerable stage for control; and (3) choosing an insecticide which is best suited for the conditions. There are many insecticides on the market, so check with your local cooperative extension specialist and determine which ones are recommended in your area. □

PARTIAL LIST OF INSECTICIDES AND TARGET PESTS

	billbugs	chinch bugs	cutworms	mites	webworms	white grubs
acephate (Orthene) ¹		x	x		x	
bendiocarb (Turcam)	x	x			x	x
bifenthrin (Talstar)	x	x	x	x	x	
carbaryl (Sevin)	x	x	x		x	x
chlorpyrifos (Dursban)	x	x	x	x	x	x
cyfluthrin (Tempo)	x	x	x		x	
diazinon ²	x	x	x	x	x	x
ethoprop (Mocap) ³	x	x	x		x	x
fluvalinate (Mavrik)		x	x	x	x	
fonofos (Crusade, Mainstay)	x	x	x		x	x
imidacloprid (Merit)	x					x
isazofos (Triumph) ⁴	x	x	x	x	x	x
isofenphos (Oftanol)	x	x			x	x
trichlorfon (Proxol, Dylox) ⁵			x		x	x

1—sensitive to high water pH

2—not for use on golf courses or sod farms

3—see label restrictions

4—not for use in sandy soils

5—sensitive to high water pH

For all products, note that state regulations vary and information may not be completely accurate. Always check the label to confirm that the pest you wish to control is indeed on the label. Mention of a product does not imply endorsement by the author.

—The author is an associate professor of entomology at the University of Massachusetts in Amherst.

Extreme heat compounds insect problems

We can't control the weather, but an understanding of its effects on pests and their control can be useful.

by R.L. BRANDENBURG, Ph.D./N.C. State University

In the southern United States, the early part of the summer of 1995 was unusually cool and wet.

In July the water was shut off and the thermostat climbed higher. The change in the weather was associated with drought stress on turfgrass, increased disease incidence, and some unusual insect problems.

Why would a sudden change of weather create unusual insect problems? The answer goes beyond insects being cold-blooded and controlled by temperature.

Some insects simply survive better on stressed turf. At other times, certain insects will become a problem because the unusual weather patterns may

allow them to escape their natural controls. Hot and dry weather favors chinch bugs because a fungal disease that often keeps them in check doesn't perform well under those conditions.

During 1995, the Southeast saw its share of chinch bugs late in the season due to the hot, dry conditions. However, the wet conditions earlier in the summer slowed their early-season build-up and

prevented any early summer problems.

The number of white grubs observed in many areas this past fall was below normal, probably due to the fact that the soil was dry in many areas during the time the beetles were laying eggs. The dry soil was detrimental to egg survival and consequently resulted in fewer grubs.

Other weather relationships may be beneficial for some pests. Cool, wet springs may lead to more cutworm problems throughout the summer. Unusually hot, dry conditions may result in more armyworms in the turfgrass as other food sources are



Adverse weather means you must track insect numbers.

depleted. This alerts us to potential pest outbreaks, but does not replace the need for turf monitoring and scouting.

Insect forecasting

The term "degree-days" is often mentioned in association with weather and insects. Degree-days are simply an accounting tool for recording how warm it has been. Most living organisms have a threshold—or minimum temperature—during which time development is possible. For insects, a common threshold is 50°F. Temperatures below this usually mean development does not take place. Insect development is more rapid as the temperature climbs above 50°F.

Developmental models have cumulative degree-day targets that indicate when an important event is likely. For example, if mole cricket eggs are expected to hatch at 2,000 degree-days—and it usually occurs around June 17 in Raleigh, N.C.—we base our prediction on that model. Should we have

How to calculate degree-days

- 1) Record the maximum and minimum temperature for the day.
- 2) Add the two numbers.
- 3) Divide by 2 for an "average temperature."
- 4) Subtract 50°F (insect development threshold temperature).
- 5) The sum is the number of degree-days for that day.

A negative number is not used since it means no development occurred. If the minimum temperature for a day was 60°F, and the temperature was 80°F, then the average would be 70°F (80+60=140÷2=70).

Subtracting the 50°F threshold would yield 20. This is the number of degree-days recorded for that day.

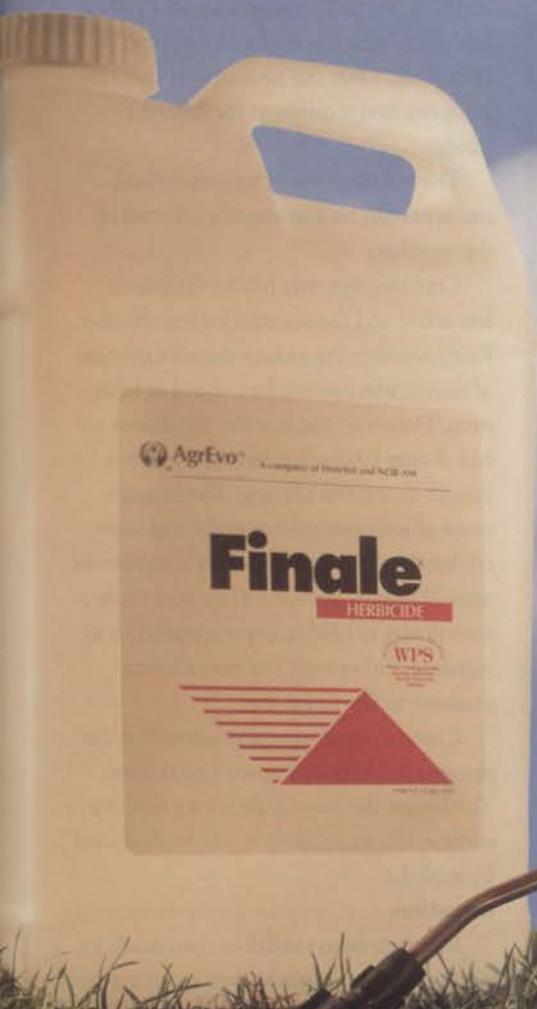
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PRODUCTS FOR CONTROL OF WARM-SEASON INSECT PESTS

Southern chinch bug: bendiocarb (Turcam); ethoprop (Mocap); cyfluthrin (Tempo); permethrin (Astro); diazinon; chlorpyrifos (Dursban); isofenphos (Oftanol); isazofos (Triumph); fonofos (Crusade); lambda-cyhalothrin (Scimitar); acephate (Orthene); fluvalinate (Mavrik)
Timing: apply as needed during hot, summer months. Thorough coverage is critical. Irrigate immediately after application of granules. Avoid over-fertilizing.

Leafhopper/ two-lined spittlebugs: acephate (Orthene); bendiocarb (Turcam); chlorpyrifos (Dursban); diazinon; carbaryl (Sevin); isazofos (Triumph); fluvalinate (Mavrik).
Timing: begin monitoring and treat damaging populations in early summer.

Cutworms, armyworms: azadirachtin (Turplex); lambda-cyhalothrin (Scimitar); acephate (Orthene); carbaryl (Sevin); diazinon; isofenphos (Oftanol); chlorpyrifos (Dursban); fluvalinate (Mavrik).
Timing: Monitoring and treatment may be necessary in early spring through late fall.

Mole crickets: chlorpyrifos (Dursban bait); propoxur (Baygon bait); carbaryl (Sevin bait); bendiocarb (Turcam); chlorpyrifos (Dursban); isofenphos (Oftanol); fonofos (Crusade); acephate (Orthene); ethoprop (Mocap); fluvalinate (Mavrik); entomogenous nematodes (Vector MC and others).
Timing: Use soap flushes to monitor egg hatch. Treat emerging nymphs in early summer.

White grubs: bendiocarb (Turcam); diazinon; chlorpyrifos (Dursban); acephate (Orthene); isazofos (Triumph); amdpro; avermectin B (Affirm bait); fenoxycarb (Award bait).
Timing: treat small grubs in late summer and fall for best control.

Ground pearls: No known effective chemical controls. Follow proper turf management practices and irrigation.

Not all trade names are mentioned, and the ones listed are used as examples. No endorsement of products is intended nor does omission of any products imply criticism.

1,900 degree-days by June 1, and accumulate about 30 additional degree days thereafter, then we can estimate that egg hatch will occur earlier than June 17. With this information in hand, we know when to begin soap flushes to verify egg hatching.

Once hatching has been verified, we can begin timely and effective control measures.

Similar intuitive methods of insect pest forecasting are used in many states. Their value depends on the accuracy and completeness of the environmental information collected, and how specific the information is to the location of interest. Using a base of 50°F, we see our first Japanese beetle adults in North Carolina at about 1100 degree-days, which is the same for Ohio or New York. Only the time of year that target is reached is different for different states.

The effectiveness of various control measures can be dramatically affected by the weather.

Cool weather may render the insects less active and the insecticides less effective. Rainy weather can reduce the effectiveness of insecticides applied for control of foliar pests. However, the hot, dry conditions we had during 1995 often have the greatest impact on control efficacy. The management of soil pests such as grubs and mole crickets is adversely affected in a number of ways. The hot, dry soil surface may cause insecticides to bind to organic matter or to vaporize. Either way, less insecticide is available to the target site.

Control of soil insects requires that the insecticide be moved down into the soil. The longer the insecticide is on a hot, dry surface, the more likely it is to be degraded by sunlight.

Irrigation

Moisture from rainfall or man-made irrigation systems is made even more important by the negative consequences of hot, dry weather. Additionally, hot, dry weather often moves the insects deeper into the soil, and therefore more difficult to control. Many turfgrass managers irrigate

A - White grub populations and the efficacy of control can be affected by weather.

B - Natural enemies, such as this beetle larva dining on a caterpillar pupa—can be affected by weather.

C - The hot, dry weather of North Carolina caused sporadic outbreaks of sod webworms, as the moths laid eggs in drought prone areas.

sites before treatment. By thoroughly soaking the soil—two to three days in advance for white grubs and one day for mole crickets—two important functions are accomplished. First, the irrigation will cause the insects to move closer to the soil surface and be more susceptible to the control measure. This pre-irrigation also reduces the insecticide binding in the organic matter near the surface. The post-application irrigation is still required immediately after treatment.

Biological materials, such as entomogenous nematodes are just as susceptible (if not more so) to hot, dry conditions as conventional synthetic insecticides.

A good scouting program and attention to detail while applying insecticides can help you manage insect pests through adverse weather conditions. **LM**



TURFGRASS PEST CONTROL CALENDAR

When to scout for insects and mites

Pests	I*	P**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ants	II	A							S or Gr					
Armyworms and cutworms	III	A							S					
Bees and wasps	II	A								S				
Billbugs	III	D,E,F					S or Gr							
Chinch bugs	III	B							S					
White grubs	I	A			S or Gr					S or Gr				
Green June beetles	I	A				S					S			
Ground pearls	III	A						M						
Leafhoppers and spittlebugs	II	A							S					
Mole crickets	I	G,H			S or Gr						Ba			
Sod webworm	III	C,D,E,G								S or Gr				

*Degree of importance as pest: I= Important pest, frequent occurrence; II= Usually present, but generally not a pest; III= Occasional pest, treat when detected.

**Preferred grass species: A= Centipedegrass, fescue, and many other grasses; B= Saint Augustinegrass; C= Fescue; D= Bluegrass; E= Bermudagrass; F= Zoysiagrass; G= Bentgrass; H= Bahiagrass.

S= Sprays; Gr= Granules; Ba= Baits; M= Maintain the turf in healthy condition, irrigate.

Plants that say: 'Keep Off the Grass'

*Strategically placed barrier plants
look better than barbed wire.*

by RUSSELL BALGE, Ph.D./

Western Maryland Research & Education Center

When Tiny Tim, the neighborhood kids, or thoughtless adults begin to tip-toe or traipse through the tulips, it's time to think about selecting plants for their benefit as barriers rather than their beauty.

Often, these barrier plants are barbed or thorned, are grown to a pedestrian-traffic-inhibiting height and planted in a wide enough bed to give people pause.

A large corner lot with a broad expanse of lawn is an open invitation to pedestrians taking and establishing well-worn short cuts. Plants must be at least knee high to deter pedestrians. If the perimeter of a corner is planted with barrier plants, pedestrians are more likely to use the sidewalk. Here are some other guidelines:

1) Do not rely solely on pruning to keep barrier plants in check.

Plants with thorns do not invite close inspection. Instead of tall plants that will need to be bludgeoned, butchered and beaten into a smaller, submissive size, plant groundcovers, shrubs and trees that will quickly mature to roughly the height and spread that you need.

2) Place barrier plants on the outside of any conventional fence when using as a second line of defense or privacy around a swimming pool. Select compact shrubs to reduce the number of twigs that might poke through the fence. Avoid plants with dry, prickly leaves that might impale feet.

3) Lay down a landscape fabric before installing any plants if you are planting a large area. This will reduce the need to venture into thorns for weeding.

4) Install trickle or pop-up irrigation for barrier plants, if possible, or channel run-off from a nearby watering system.

5) Safety equipment: sturdy gloves, a long-sleeved shirt, thick full-length pants, barbecue tongs, salad tongs.

6) Shred clippings before composting prickly



The paleleaf barberry grows two feet tall—a perfect height for sticking wayward human knees and shins.

prunings or using them as a mulch.

7) Use barrier plants to burglarproof your house. Most burglars are amateurs, seeking an easy target, so anything you can do to discourage them is to your advantage.

8) Avoid plants that can grow high enough to obstruct windows, or wide enough to crowd doors or sidewalks. Select plants that do not need frequent heavy pruning, and which have a slow growth rate. Leave at least one window free of thorny plants as a possible escape route in the event of an emergency. Leave space between the shrubbery and the foundation to allow air circulation.

9) Don't plant prickly or thorny plants around children's play areas or outdoor eating areas.

10) In general, the pricklier and thornier the plant, the better.

—The author is a regional specialist in commercial horticulture at the Western Maryland Research and Education Center, and a professor at the University of Maryland. This article was condensed from "Free State Nursery News," where it originally appeared.

LANDSCAPE PLANTS TO CONSIDER AS BARRIER PLANTS

BOTANICAL NAME	COMMON NAME	EVERGREEN / DECIDUOUS	HEIGHT	USDA ZONE
<i>Agave americana</i>	century plant	E	6"	6
<i>Aralia elata</i>	Japanese angelica tree	D	45'	3
<i>Berberis beaniana</i>	Beran's barberry	D	8'	6
<i>Berberis buxifolia nana</i>	dwarf Magellan barberry	E	18"	5
<i>Berberis candidula</i>	paleleaf barberry	E	2'	5
<i>Berberis x chenaultii</i>	Chenault barberry	E	4'	5
<i>Berberis circumserrata</i>	cutleaf barberry	D	6'	5
<i>Berberis coccinea</i>	dainty barberry	E/D	3'	6
<i>Berberis darwinii</i>	Darwin barberry	E	10'	7
<i>Berberis gagnepainii</i>	black barberry	E	6'	5
<i>Berberis gilgiana</i>	wildfire barberry	D	6'	5
<i>Berberis juliana</i>	wintergreen barberry	E	6'	5
<i>Berberis koreana</i>	Korean barberry	D	6'	5
<i>Berberis x mertorensis</i>	Mentor barberry	D/E	7'	5
<i>Berberis potaninii</i>	longspine barberry	D	8'	7
<i>Berberis x stenophylla</i>	Rosemary barberry	E	9'	5
<i>Berberis thunbergii</i>	Japanese barberry	D	18'-7'	4
<i>Berberis triancanthophora</i>	threespine barberry	E	4'	5
<i>Berberis verruculosa</i>	warty barberry	E	4'	5
<i>Celastrus flagellaris</i>	Korean bittersweet	D	24' (vine)	4
<i>Chaenomeles japonica var. alpina</i>	Japanese quince	D	3'	4
<i>Chaenomeles speciosa</i>	flowering quince	D	6'	4
<i>Crataegus phaenopyrum</i>	Washington hawthorn	D	30'	4
<i>Elaeagnus angustifolius</i>	Russian olive	D	20'	2
<i>Elaeagnus pungens</i>	thorny elaeagnus	E	12'	7
<i>Elaeagnus umbellatus</i>	autumn elaeagnus	D	12'	3
<i>Halimodendron halodendron</i>	salt tree	D	6'	2
<i>Hippophae rhamnoides</i>	sea buckthorn	D	30'	3
<i>Ilex cornuta</i>	Chinese holly	E	18"-10'	7
<i>Juniperus chinensis</i>	Chinese juniper	E	18"-20'	4
<i>Juniperus horizontalis</i>	creeping juniper	E	6"-18"	2
<i>Lycium halimifolium</i>	Oregon grape holly	E	2'-6'	5
<i>Opuntia basilaris</i>	beavertail prickly pear cactus	E	4'	5
<i>Paliurus spina-christi</i>	Christ thorn	D	18'	7
<i>Poncirus trifoliata</i>	hardy orange	D	35'	5
<i>Prinsepia sinensis</i>	cherry prinsepia	D	10'	4
<i>Pyracantha atalantiodes</i>	Gibbs forethorn	E/D	18'	6
<i>Pyracantha coccinea</i>	scarlet firethorn	E/D	18"-6'	6
<i>Pyracantha crenulata rogersiana</i>	Rogers firethorn	E	10'	7
<i>Rhamnus cathartica</i>	common buckhorn	D	18'	2
<i>Robinia hispida</i>	rose acacia	D	3'	5
<i>Rosa rugosa</i>	sea tomato rose	D	3'-6'	2
<i>Rosa spp.</i>	many names	D	3'-6'	2-5
<i>Smilax rotundifolia</i>	common greenbrier or horsebrier	D	30'	4
<i>Sophora davidii</i>	vetch sophora	D	7'	5

SOURCE: DR. BALGE

Pesticides on the shelf:

Our national government seems to be devoting almost all its energy to positioning for the 1996 Presidential election. That leaves little time to attend to issues that might affect the green industry.

by RON HALL/Senior Editor

So far in 1996, the environment—including pesticides—is not one of Washington D.C.'s burning issues. The green industry is even less of a topic.

The Capital crowd is concerning itself...well, mostly with itself. An impending Presidential election tends to do that.

"The environment is not a first-tier issue," says Mary Bernhart, environmental policy manager for the U.S. Chamber of Commerce.

"It's not something that will make or break an election. No one candidate is going to lose because of his or her stand on environmental issues," says Bernhart. "And Presidential politics kicked in very, very early."

Presidential politicking may, in fact, keep Congress from modernizing FIFRA by year's end, although Allen James remains "guardedly optimistic" it won't.

James, headquartered in Washington D.C., is executive director of Responsible Industry for a Sound Environment (RISE). FIFRA is the Federal Insecticide, Fungicide and Rodenticide Act that governs the use of all pesticides in the country.

"It's been 10 years since FIFRA was overhauled, and more than 10 years since it was overhauled in a

big way," says James.

Delaney Clause blues

Especially worrisome to industry is the so-called Delaney Clause which is included in FIFRA. The Delaney Clause says no product will be registered or sold that has been linked—even by a single test—to causing cancer.

It's been in effect since 1958, but today's sophisticated testing and detection capabilities would—assuming Delaney is enforced—disqualify almost all chemical products.

"There is a greater recognition that the Delaney Clause is outdated scientifically and that it needs reform," says a staff member for Senator Richard Lugar (R-Ind.), chairman of the Senate Agriculture Committee.

RISE wants the Delaney Clause revoked. Many others, both on and off Capitol Hill, feel the same way.

"The big obstacle is that Presidential politics are soon going to take the place of all other politics," says James.

Political tug of war

As part of the bigger picture in the Capital, political action escalated last fall when Pres. Bill Clinton and the Republican majority in Congress locked horns over the Republicans' balanced budget proposal.

But the stakes involve more than dollars, says Congressman John Linder (R-Ga.).

"Any two of us can sit down in the next 30 minutes and solve this problem. This is not about money, it's about control," says Rep. Linder.

The impasse between the President and Republicans has, in fact, accomplished something unprecedented: it shut down federal offices twice this past winter, and threatened a third shutdown this spring.

It also put a funding squeeze on the U.S. EPA. The Republicans authored a \$1 billion reduction (10 percent) from EPA's actual 1995 budget in the face of the President's request for a \$1.7 billion increase.

Re-registration process slows

The smaller budget is causing EPA to slow pesticide re-registration just



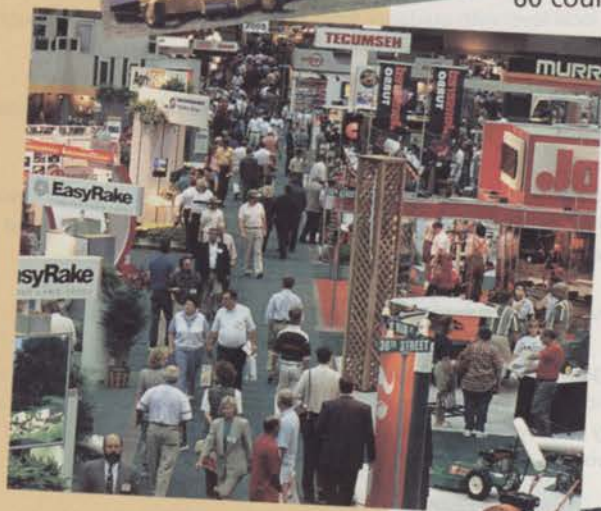
Phil Forgarty, left, Crowley Lawn Service, and Bill Hoopes, Barefoot Grass, leave Old Executive Office Building during PLCAA's 1996 legislative visits.



Rep. John Linder (R-Ga.) says budget stalemate is really a tug-of-war for power.

cont. on page 32

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cont. from page 30

when it was gaining momentum.

In 1995, the EPA re-registered 40 active ingredients, "historic numbers," according to the EPA's Jim Aidala, Associate Assistant Administrator for Prevention, Pesticides and Toxic Substances.

"One of the biggest complaints has been, gosh, there are all kinds of these old chemicals, and they're not getting re-



'Lawn care issues aren't terribly controversial right now. It doesn't mean they're gone.'— Jim Aidala of the U.S. EPA.

viewed," says Aidala. "Finally, we were getting a pay off to the 1988 amendments to the statute (FIFRA). We were getting products reviewed."

Since chemical manufacturers fund half of the process, some re-registration work continues, Aidala explains.

But pesticide issues remain one of EPA's top priorities.

WASHINGTON'S IMPACT ON THE GREEN INDUSTRY

PROPOSAL

HOW IT WOULD AFFECT YOU

Adams Fruit Bill

Prohibits lawsuits against agricultural employers for work-related injuries (under the Migrant and Seasonal Agricultural Workers Protection Act) when employees received workers' compensation.

Clean Water Act, Wetland Reform Act

One provision likely to pass would allow golf superintendents to use the broad-spectrum fumigant methyl bromide until suitable alternatives are available. Passage of new act will place more decision-making at the local level with guidance from Army Corps of Engineers. Republicans reluctant to pursue this legislation; passage unlikely this Congress.

Endangered Species Act

Three proposals have provisions dealing with taking and modifying species habitat and private property rights. Very controversial; not likely to pass this Congress.

EPA budget cuts

Would curtail underground storage tank clean-up activities; would limit enforcement of environmental standards and reduce funds for wastewater projects. Would also limit EPA-sponsored training and publication of newsletters and guidebooks.

FIFRA/Title IV

Deals with infant/child exposure to toxic substances; could include "sensitive populations."

Immigration control

Could slow the number of legal immigrants by 30 percent and stop illegal immigration. This would cause a labor shortage in agriculture that could be passed on to the you. "Automated verification" provision would require every employer in the nation to phone a toll-free number "to ask permission to hire any new worker, citizen or not," according to A.A.N.

Minimum wage increase

Undetermined whether it would force layoffs to cut expenses or allow employers to hire more workers. It also might force manufacturers to take their operations overseas where labor is cheaper, freeing up more viable prospective domestic employees.

Minor Use Crop Protection Act

Would provide additional new pest and disease management tools. Officially endorsed by EPA.

Occupational Safety and Health Administration changes

Could downshift OSHA into non-enforcement actions like consultation, education and training. A separate "ergonomic standard" that places heavy punishment on small businesses is still alive. Approved by Senate Labor Committee, but Pres. Clinton has promised to veto it.

Reclamation Recycling and Water Conservation Act of 1995

Would create water recycling projects in California, Nevada, New Mexico, Utah. Could also require effluent water to be used to irrigate golf courses, parks, cemeteries and other open areas.

Safe Drinking Water Act

Would establish a national, non-point-source pollution standard controlling runoff. Passage likely this Congress.

State Management Plans

Would outlaw using atrazine, simazine, cyanazine, alachlor and metochlor in all states except those with state management plans.



Delaney says the green industry has facts and credible info supporting its claim that it's at environment's forefront.

Residential exposure studied

For instance: the turf industry, at EPA's direction, has put together an Outdoor Residential Exposure Task Force to define and quantify just how much exposure to pesticides people are getting.

"The questions that have to be answered are: What are the real exposures, and what are the real risks?" says Aidala.

"The sooner we can get this informa-

tion, the better off we will be," he adds. However, it will be at least 18 months before the EPA can start wading through this data.

The EPA says pesticide labeling should be more consistent and clear, especially for consumers.

"You can have all the greatest information in the world on the label, but if nobody can understand it, or read it, or use it, it doesn't do a lot of good," says Aidala.

Industry/EPA partnerships

On a more positive note, the green industry and the EPA have struck what looks like a good deal for professional turf managers.

Both the Golf Course Superintendents Association of America (GCSAA) and the Professional Lawn Care Association of America (PLCAA) are partnering with the

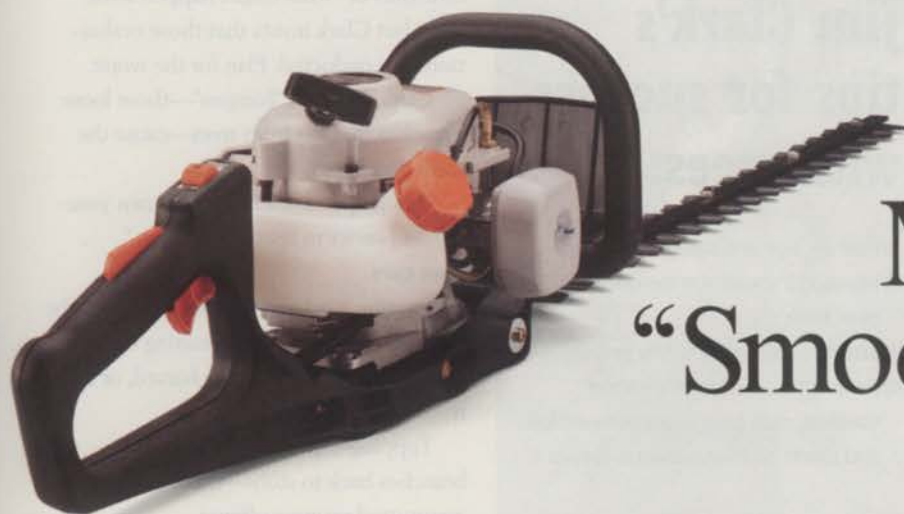
EPA in separate "Pesticide Environmental Stewardship Programs." The aim of these programs is to encourage user groups to develop and implement strategies for reducing risks associated with pesticide use.

Thomas Delaney of the PLCAA says he hopes that individual PLCAA members can become involved in the EPA-approved stewardship program by early summer.

"They (members) have to be using good practices and adding something, too, that shows they're willing to increase the protection of their employees or the public. They can come up with practices of their own," explains Delaney, that can be used as marketing tools.

The GCSAA is partnering with EPA at the association level.

"We didn't think setting up a program where individual golf courses would be graded and become individual partners was workable," says GCSAA government relations manager Cynthia Kelly. **LM**



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Plan for tree failure and variety

Even the mightiest oak's days are numbered. To best benefit from a tree's 25- to 50-year lifespan, plant diverse species and reduce tree/turf conflicts.

Superintendents are happy when trees grow free of problems. When problems arise—like safety problems and disease problems—they tend to feel otherwise.

Careful planting, realistic assessment of tree longevity and attention to tree needs that matches the concern you have for turf will eliminate these problems, says Dr. Jim Clark, an arborist with HortScience, Inc., of San Francisco.

For starters, get it out of your head that a tree will live "forever." Realistically, says Clark, tree life is measured between 25 and 100 years.

"Trees are planted, they take up space and then they die," says Clark, who tells superintendents and landscape managers to plan for tree decline, failure, maintenance and safety over the course of the tree's life.

Age & species diversity

The best stands of trees contain an assortment of young and old trees growing at the same time. When all the trees along a fairway or corporate business park are the same age and species, at some point they're going to decline rapidly or get hit with a common disease...all at once.

When the giants come down, in a golf course scenario, says Clark, "Unless we have a new population of trees growing to replace older ones, the potential is great for changing the look and playability of the course."

Clark often encounters a reluctance among course members to remove any tree, be it alive or dead, and says it's much easier to overcome that reluctance if you can have a younger tree next to it to take its place.

Another aspect of species diversity: if

▶ *Jim Clark:
Trees respond
more slowly to
irrigation than
does turf.*



Jim Clark's tips for success with trees:

- 1) Plan for age and species diversity.
- 2) Manage a stand of trees carefully over time.
- 3) Scout for potential safety problems.
- 4) Reduce the number of tree/turf conflicts, such as nutrient competition and shade problems around greens.

some problem develops within that species, we're in tough shape if that species is dominant in our working area.

The Monterey pine beetle and pine pitch canker were recent infestations that wiped out many Monterey pines in the San Francisco Bay area. That's an extreme ex-

ample, but it can happen.

"Whether it's Dutch elm disease or oak wilt or pine bark beetles," says Clark, "our reliance on a single species leaves us open to a large-scale infestation and potential for losing lots of trees. If we're on a site that is dependent only on this species, as those two pests become more problematic we're going to run into trouble fairly rapidly."

Public safety

Clark suggests it's better to discuss tree maintenance before an accident happens than to discuss it with an attorney after an accident. Be realistic when assessing a tree's condition and potential for falling. Even though a certain tree might be a significant component to the hole's play, if there was a tree failure, what's the likelihood that there would be a "target" standing beneath the falling branches?

Safety evaluations may be only rough estimates of "what might happen some day," but Clark insists that those evaluations be conducted. Plan for the worst.

Clark says that "hangers"—those loose branches that fall from trees—cause the most accidents.

"Look up," says Clark, "and train yourself and crews to spot the hangers."

Tree care

Pruning is related to both safety and the life of the tree. Incorrect pruning can turn a tree into a wind-sensitive hazard, or kill it.

Topping—that is, cutting main branches back to stubs—is the most often committed pruning offense.

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Consult a professional arborist with questions. If you don't have a well-trained tree expert on staff, don't do it yourself. Let the arborist do the job. **LM**

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Husqvarna 235P reaches up to 13 feet



Power Pruner 1250, from Technic Tool

TREE PRUNERS

by TERRY McIVER / Managing Editor

Tree pruning is one of the most labor-intensive green industry jobs. It's essential that your tools are lightweight and easy to use.

"Generally, if you look at landscape business and crew activity, [landscapers] are going for a bigger piece of the pie," says Mark Michaels, senior forestry manager at Husqvarna. "Companies doing hedgework and young trees will see it as a logical step to move on to larger, 15- to 20-foot trees. It's natural for a landscape management company handling a housing development to try to get the tree pruning work, but you have to do it right."

Butch Rhoton, president of Brewt Power Systems of Atwater, Calif., says the most important question to ask when shopping is, "What type of pruning are you doing?" The answer determines whether you should go with a pneumatic or gas-powered pruner.



Gilmour's 150400, from Ben Meadows Co.



Maibo pneumatic is easy to use

Pneumatic pruners, those used for high-production pruning, are your best choice for branches of two inches diameter or less, and it's no secret that a pneumatic pruner gives you a cleaner cut due to the speed at which the blades operate.

"The branch heals better, and it's better for the aesthetics of the tree," explains Rhoton.

"Pneumatic shears are lighter and quicker," says Rhoton, "and you can do lots of sucker branch trimming. If you're only cutting two or three limbs, use a gasoline-powered unit. But at an office complex, where there's much pruning to be done and you're making 50 cuts per tree, you want something that's quick, and pneumatic is the only way to go."

Before you even buy, however, you or people on your crew should be certified. Contact the National Arborist Association for information at (800) 733-2622.

If you're thinking about adding tree pruning to your service mix, know the importance of proper training, and know the capabilities and/or limitations of the equipment you use. **LM**

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Company	Product/specifications
Brushking (800) 959-2887 Circle 280	A new 6'6" lopping shear allows a man of average height to get a 12' reach into a tree. It cuts a 1 3/4-inch limb. A pivoting head allows the operator to get at hard-to-reach limbs.
Echo (800) 432-3246 Circle 281	The "Aggressor" reaches limbs up to 14 ft. tall. Powered by a 21.2 cc engine, the Aggressor's reciprocating action cutting stroke and exclusively designed blade remove limbs up to 4 1/2 inches in diameter. The unit weighs 11.4 lbs.
Corona (800) 241-6401 Circle 282	Professional Pole Pruner System offers a choice of two heads, a pruner and saw blade; 6-ft. fiberglass poles. Pruner head cuts limbs up to 1 3/4 inches in diameter. Phone number is for distributor Ben Meadows Co.
Fanno Saw Works Circle 283	Pruning saws and accessories using quality steel and craftsmanship. Single-blade, manual pole saws reach up to 16 ft.
Felco (206) 827-7676 Circle 284	Considered the quality standard for the tree pruning industry, Felco manufactures a wide variety of hand-held pruners, limb loppers, saws and pneumatic pole pruners.
Gilmour (800) 241-6401 Circle 285	Gilmour makes a wide range of products. Its professional rope-type pruner cuts limbs up to one inch in diameter. Heavy-duty iron pruner head and three wooden poles reach to 18 feet. Gear-driven tree pruner includes multi-power dual pulley system with gear drive, telescoping fiberglass pole that adjusts from six to 12 feet. An 18-foot unit is also available.
Husqvarna (800) 487-5962 Circle 286	The 235P is a gasoline-operated model available with bypass lopper or anvil pruning head. Cuts branches up to 1.5 inches in diameter. Telescoping pole provides up to a 13-foot reach. Two pole lengths are available. The 250PS comes with a 3.0 cu.in. 2.4 hp engine with 11,000 maximum no-load RPMs.
Lesco (800) 321-5325 Circle 287	Hand pruners, lopping shears and tree trimming pole saws are available. Pole tree trimming saws feature 16-inch blades, and reach up to 12 feet in height.
Maibo (800) 255-9180 Circle 288	The Maibo Pneumatic Pruning System is lightweight and easy to operate. Limbs can be cut with the light squeeze of a trigger. Pruner is designed for low maintenance. Models for vineyard and nursery shearing and high-volume pruning weigh from 1.32 lbs. to 6.17 lbs. Compressors are also available as engine- or P.T.O.-type.
Mid-Continent Industries (800) 279-6812 Circle 289	The Limb-A-Nator is an extender for use with 28 different manufacturers' chain saws. Mid-Continent reports the Limb-A-Nator safely trims or prunes limbs from ground level. It extends chain saws by almost seven feet. Bolts in place of existing cutter bar on most popular chain saws. The chain drive is safely enclosed inside shaft. The cutter bar and chain are lubricated by an oiling system within the wand.
Pellenc P2000 (702) 826-4611 Circle 290	This electronic pruner was designed for creating prized Gallic grapevines, and can handle the needs of demanding horticultural professionals, says Pellenc America. The tool is powered by a lightweight battery carried in a belt pack. Tangle-resistant cable carries 24-volt, DC current to a special motor in the cutting head's comfortable hand grip. An electronic system provides total control of the blade action. Slow trigger movement opens and closes the blades slowly; a quick pull of the trigger moves the cutting blades at lightning speed.
Stanley (503) 659-5660 Circle 291	Pole chain saws, circle saws and pneumatic pruners for right-of-way crews, utilities, parks departments and landscape managers. Heavy duty pruner operates from tree trimming vehicle or bucket truck. Circle saw uses a unique one-piece angled motor and yoke for durability.
Technic Tool (800) 243-9592 Circle 292	The Power Pruner PP1250 gasoline-powered pruner weighs 16.3 lbs. without extensions. Fiberglass shaft housing, standard shoulder strap, automatic oil reservoir, 44 drive links, chain speed is 2000 ft. per minute. A five-foot extension allows for maximum 22-foot reach.

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\$500!

LANDSCAPE MANAGEMENT magazine is offering a \$500 first prize to the winner of a random drawing to be held on June 21, 1996. Second prize is \$300 and third prize \$200 in cash. In order to be eligible for the drawing, simply fill out the questionnaire below and return it to LM's editorial offices.

Answers to the questions will be the basis for our "1996 Emerald Awards," to be revealed—along with the contest winner—in our August issue.

CONTEST REQUIREMENTS: Contestants must be owners or employees of landscape maintenance companies or lawn care companies; or maintenance employees of a golf course or country club, including superintendents and assistant superintendents; or an athletic field manager or member of an athletic field maintenance crew. Employees of Advanstar Communications and their families are not eligible.

All questions on this entry form must be completed, and all blanks filled. One entry per person. No more than five entries from any one employer will be allowed. Entry forms will appear in the March, April and May, 1992, issues of this magazine.

Completed questionnaires should be mailed to: Emerald Awards, LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130. They must be received by noon, June 21, 1996.

A random drawing of all eligible entry forms will be held the afternoon of June 21, 1996. The winners will be notified within 24 hours.

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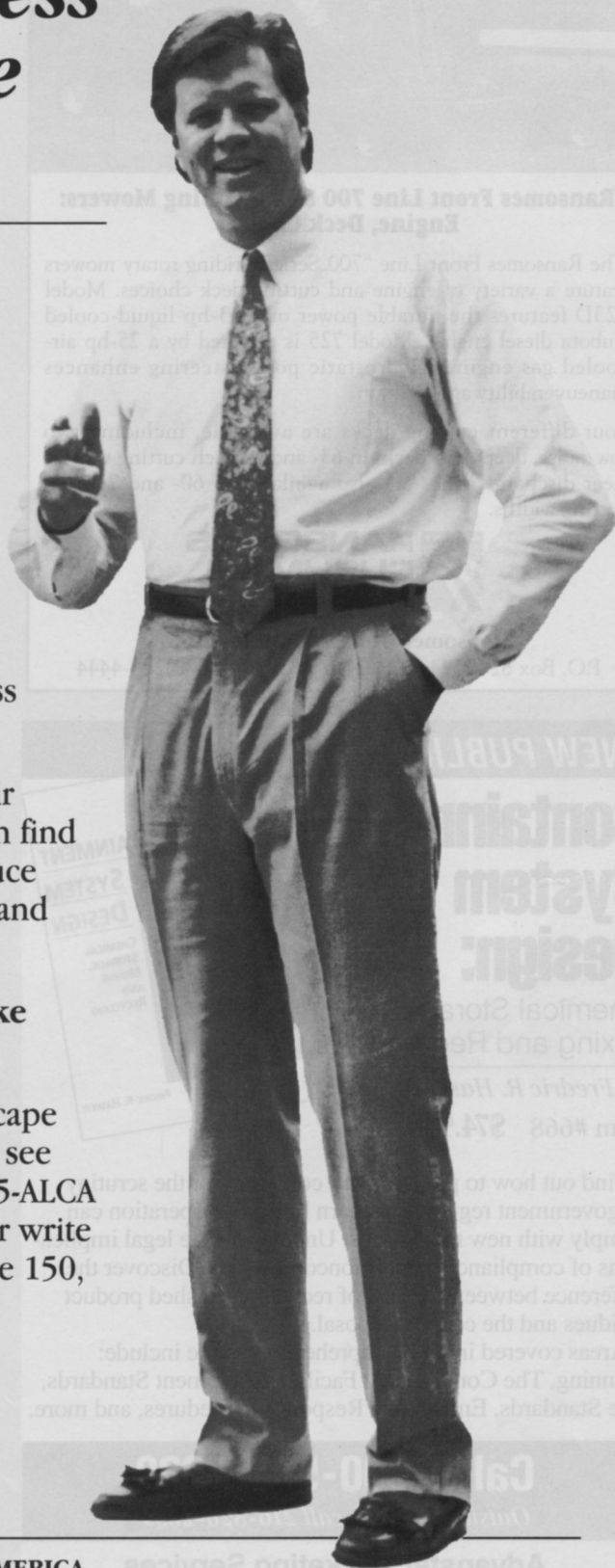
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[GOLF/GROUNDS]

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Bentgrass from poa fairways

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Dog rescues stadium from gulls

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Golfers learn to love supers

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Soft hammer to educate members

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'Golf & the environment' debate

The effects of the blistering summer of 1995 are making spring turf repair difficult, but being outdoors is a welcome change from a brutal winter!

Rick Grote of Terrace Park Country Club in Milford, Ohio, had started to bring the course back from last summer's heat when I called in mid-March.

Northerners usually breathe easier by mid-August, thinking the worst of the hot weather is behind them, but Grote said that last summer taught him and others to never let down their guard—even after August 15th!

"Soil temperatures were so high in summer that we had a bad seed catch," he said. "And then, in October, the cold hit overnight, which reduced turf repair time. We're hoping it warms up quick. We've been spiking and seeding, but we have to hold off on the pre-emergence herbicides that will keep seed from germinating."

Wayne Lemanski of Indian Lake Hills Golf

Course in Niles, Mich., had been busy tuning up equipment when we spoke.

"We're working on some equipment, waiting for our weather to break," he said. Lemanski's now using rotary mowers in the golf course rough areas. "The turf blades stand up better with rotary mowers," he said. "The rotaries are easier to maintain; there's some bearing, wheel and blade maintenance, but it's easier than reel mower maintenance."

With all the talk today about finding good employees, Lemanski said it's important to "keep your help happy" by finding ways around worker complacency. One simple solution: he shifts job duties around to give the individual crew person some job variety and well-rounded experience.

"Everything's ready to go; now we're waiting

for the course to green up," reported James Cochran, of Piper's Mill Golf Course, located in Eureka, Mo.

Cochran sounds like a superintendent who knows his job, does it well, and doesn't put much stock in fancy-schmancy ways to attract golfers to the course beyond...a good golf course!

"We have a good course here, and the price is right," he said. "There are too many courses out there," trying to make a go of it, and their managers try anything to bring in the golfers.

Special rates for seniors? he asks. "They're the ones with all the money!"

"Two for the price of one? You're giving away your golf, and not running a very good ship!"

Cochran's philosophy on employee relations is basic. "The American worker wants to know two things: how much he's getting paid and what his benefits are. The superintendent [job applicant] also wants to know if he gets a pick-up truck.

"I want superintendents who are out on the course cutting greens, not driving around. I want people who care about the golf course."

Cochran enjoys working the course, and that's good. There's lot's of golf ahead! **LM**

Cabin fever subsides as supers ready for spring



Terry McIver

TERRY McIVER
Managing Editor

Bent fairways from *Poa annua* are working at Westwood

by JERRY ROCHE / Editor-in-Chief

Walter Montross of Westwood Country Club in Vienna, Va. undertook the herculean task of converting 95 percent *Poa annua* fairways to Pennlinks bentgrass in 1990. The key to the program's success was simply ceasing management of the fairways and letting the poa die out, and then giving Mother Nature some help.

"We encouraged the poa to re-emerge," Montross remembers, "and then blew it away with Roundup."

"It was a radical change. Our fairways had been 95 percent poa for the past 15 years. Many of us in the Mid-Atlantic area are concerned about overseeding bermudagrass with rye, but the deciding factor

was length of dormancy in this area."

Not too many years ago, bentgrass might not have been a viable choice for fairways in the transition zone. But with improvements in mowing techniques, pesticides and irrigation, it seemed right.

"It doesn't cost a penny more to maintain bentgrass rather than rye," Montross observes, "but you have to watch traffic under droughty conditions, and there's no overseeding."

The entire project cost \$39,000: \$7500 for irrigation modification, \$3500 for drainage tile, \$15,000 for seed, \$6,000 for renovation chemicals, \$7000 for Bayleton and Subdue fungicides.

"I never thought I had a choice," the veteran superintendent says. "When I was hired, I was given a mandate for change. We talked about doing it little by little, but I said let's bite the bullet and do the whole thing at once."

"I had confidence that I could do it, but I also had a tremendous amount of support from my old college professor Doug Hawes, the University of Maryland, Virginia Tech, the USGA, the people at Burning Tree and other superintendents."

"The process itself was seat-of-the-pants. In a way I was very naive because I didn't anticipate the problems that two inches of thatch could cause."

Westwood's number 18. 'It doesn't cost a penny more to maintain bentgrass rather than rye,' says Walter Montross.





Die, poa, die

The course closed one day (Aug. 30th), during which Roundup non-selective herbicide was sprayed. Renovation began on Sept. 7th when the fairways were aerated three and four times with a Toro fairway aerator.

During the renovation, the fairways were closed, and golfers had two options: hit from the tees, and play the following shots from the rough to complete the hole. The second—and most popular option—was to play shorter-cut roughs as “par 3” holes.

Before seeding, Scott’s Starter Fertilizer (19-5-26) was applied to the fairways.

“Then we cross-seeded with Pennlinks+Nutricote, two pounds of treated seed per 1000 square feet,” Montross remembers. “We used a tennis court roller to roll them.”

“We did a decent sales job,” Montross remembers, “but a lot of the membership was leery. Four days after seeding, we saw seedling emergence, and that brought an audible sigh of relief from the club.”

The fairways were rolled on the 12th day. (“Members thought we were cutting the grass.”) Country Club 18-3-12 fertilizer was applied three times.

On the 18th day after seeding, “the poa started to out-compete the bent where the

bent was thin, but crown damage on the young turf was the most frustrating thing I went through,” Montross says.

Mowing began on the 22nd day after seeding with a Toro 223D modified five-plex. “Once mowing was initiated, the turf started performing well,” he notes.

Maintenance crews had to take extra care with divots—which were “extensively topdressed”—the rest of the fall. The course reopened Oct. 14th with the Virginia state high school championship, and cart restrictions were lifted in mid-November.

“We were like a ghost town for 40 days, then everybody wanted to play,” Montross remembers.

A sunny epilogue

Since renovating, Montross has “sort of used everything under the sun,” including Dimension, Embark, Scott’s TGR, Primo, Cutless, Betasan and pre- and post-emergence crabgrass herbicides.

“We’ve been on a Prograss program, full bore, since 1994, and that’s what we’ll continue on,” Montross observes.

The fairways are now 80 percent bentgrass and 20 percent *Poa annua*. They are mowed at ½ inch, and thatch has been reduced to ½ inch through extensive core aeration.

Montross, who became a GCSAA-certified superintendent in 1984, cautions

The fairways at Westwood Country Club are now 80 percent bentgrass and 20 percent *Poa annua*.

other superintendents who may be considering total fairway renovations.

“Many people jump into these programs and don’t realize the potential loss of revenue,” he says. “We estimated 35 percent loss of play, but it was 90 percent—\$60,000 total over the 40 days we were closed. Some of that we did recoup when we opened the course back up.”

Today, Montross looks back on the experience as “the highlight of my career. Success begets success, so we’ve been fortunate to be able to do a lot of other fun things since then.

“After last year’s fiasco with gray leaf spot destroying the rye,” Montross concludes, “a lot more superintendents around here are looking at bentgrass as a viable alternative.”

Montross is a 1975 graduate of the University of Maryland. He’s been president of the Greater Washington GCSA and the Mid-Atlantic Association of Golf Course Superintendents, and he served as a director of the Virginia Turfgrass Council for three years. He was superintendent at Springfield Golf and Country Club before going to Westwood. □

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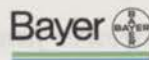
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Circle No. 106 on Reader Inquiry Card

The day Sarge saved Milwaukee's field from seagulls

Grounds manager Dave Mellor 'went to the dogs' to save his Milwaukee County Stadium turf. Brewer fans applauded the effort.

When seagulls threatened major league baseball in Milwaukee, David Mellor and his grounds crew solved the problem with well-trained dogs.

Mellor is grounds manager at Milwaukee County Stadium, home of the Brewers. To his knowledge, this is the only time dogs have saved baseball. And, not just a single game, but two weeks of baseball by the American League Brewers.

Mellor told *LANDSCAPE MANAGEMENT* magazine about an incident after reading our January article about the growing popularity of using dogs to chase geese off golf courses and other fine turf areas.

The problem began after a June 1993 concert by former Beatle Paul McCartney at the stadium. Warm temperatures and persistent rains during the week of the concert prompted hordes of cutworm moths in trees surrounding the stadium to hatch.

Stadium lights drew the moths to the ballpark.

Mellor says that as he and his crew deep-tine aerated the field at the conclusion of the concert, just before midnight with the stadium lights turned off, he saw moths landing on the turf.

Because the Brewers hosted the New York Yankees the following night, he and the crew returned the following sunrise.

"I saw a couple of seagulls on the field. They ate a few moths, and flew away. We didn't think anything about it," recalls Mellor.

But an hour later the gulls returned; they brought friends—maybe 600. By mid-afternoon, after feeding, they left the field. But, an hour before sundown, they returned. This time as the Brewers and Yankees played.

"We thought, 'Oh, No!'. By the fifth inning we had several hundred seagulls on the field again," says Mellor. "The birds wouldn't leave. The ball would be lined within two feet of them and they'd take off a little bit and land right back down.

"The Yankees were complaining; they wanted to protest the game, and the umpires were asking, 'What can we do about this?'"

They managed to complete the game, but there were more to play on consecutive nights. And, shortly after sunrise the following day, the gulls were back—more than 800—estimates Mellor.

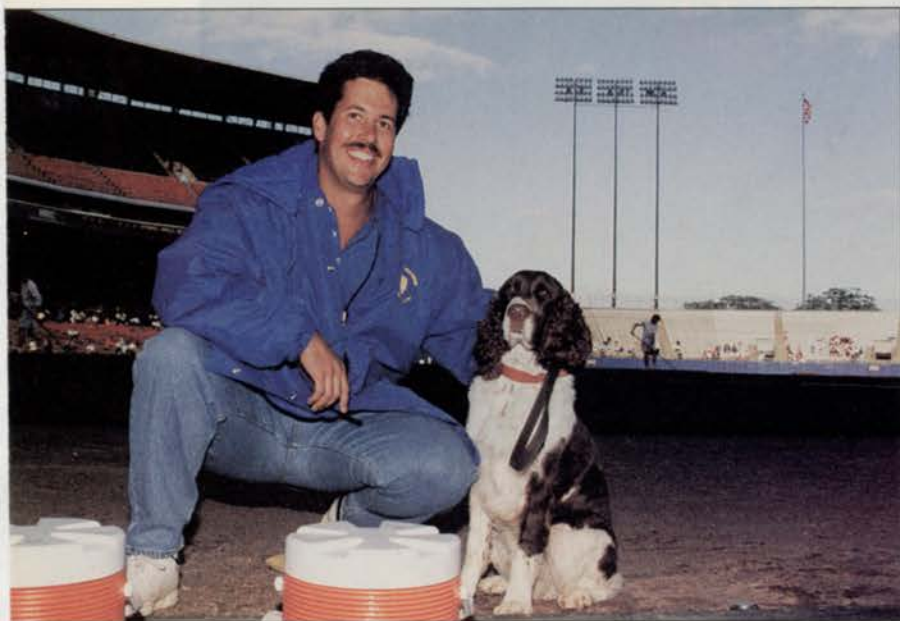
"They were just kind of walking around making a big mess," he says. "They had already eaten most of the moths but they were used to coming there, and we couldn't scare them away."

They had developed a landing habit pattern, believes Mellor, a pattern that had to be broken.

The Department of Natural Resources suggested loud noises and, indeed, the crew had some success

cont. on page 10G

Dave Mellor with Sarge, the Springer Spaniel that saved Milwaukee's turf from a horde of seagulls.



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The foundation of good disease management.





Milwaukee County Stadium ground crew kept shovels and buckets handy for dog emergencies.

cont. from page 6G

using bottle rockets which they shot out of starter pistols. Also the bomb squad of the Milwaukee County Police set off several detonations.

But Mellor knew he couldn't keep up this barrage during a game. Harming the gulls was out of the question, too. They're protected by the Migratory Bird Act.

Finally, Mellor called his wife's boss, a member of the Wisconsin Waterfowl As-

The Yankees were complaining. The umpires didn't know what to do, says Mellor.

sociation. The hunter suggested well-trained dogs.

Immediately, the call for dogs went out. In fact, the grounds crew held impromptu auditions that very day, and found some likely candidates.

"The dog had to be able to run out onto the field, chase the birds so they would fly up into the air, and come right back to the owner in time so we didn't delay the game.

"There are only 120 seconds between the last pitch of one half-inning and the first pitch of another," says Mellor.

That night, and for the remaining

games of the extended home stand, Mellor and his crew sat one dog in the stands near the right field foul pole and another near the left field foul pole. Then, as the inning ended, or there was a pitching change, the dogs raced onto the field and harassed the gulls.

"The dogs were having a great time. It was like playing for them," says Mellor.

The handlers would call the dogs back at exactly 90 seconds. Not once did the dogs create a problem, in fact the fans loved them. Some of the ball players offered to buy several of them.

"One of the best dogs was Sarge, a Springer Spaniel," says Mellor. "His owner could not come to every game so Sarge came home with me at night and came to work with me the next day."

The Milwaukee grounds crew used fireworks and dogs for several weeks, even after the Brewers went on the road, before it finally convinced the gulls to leave the turfgrass for good.

"The dogs saved major league baseball here in Milwaukee for about two weeks," says Mellor, who also credits his boss Gary Vandenberg and assistant Troy Smith who, he says, helped him at every turn. □



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Circle No. 130 on Reader Inquiry Card

Golfer attitudes toward supers are improving

Most of America's golfers believe that golf course superintendents use pesticides and fertilizers responsibly, according to a new independent study commissioned by the Golf Course Superintendents Association of America.

The study, which was conducted by the National Golf Foundation at the GCSAA's request, looked at the attitudes of a representative group of more than 1,000 golfers.

More than 80 percent of the golfers surveyed believe that superintendents are environmentally responsible and that they use chemicals and water wisely. Nearly two-thirds of golfers now believe that golf courses are good for the environment, up from just 55 percent less than two years ago.

"Golfers believe in the need to protect our environment," says GCSAA president Bruce Williams.

RESULTS OF THE SURVEY:

How do you perceive the golf course superintendent at the course you play most frequently?

facility managers	56%
skilled blue collar workers	46%
business people	19%
unskilled, uneducated workers	2%
don't know	4%

Describe the responsibilities of the golf course superintendent at the course you play most frequently:

maintenance of the golf course	88%
environmental practices	37%
the landscaping	22%
greens mowing	19%
manage golf facility	11%
don't know	3%

Who is most responsible for the quality of the golf course you play most frequently?

superintendent	76%
general manager	7%
club pro	2%
club manager	2%
don't know	13%

Who is best equipped to teach golfers ecology and conditioning of the golf course you play most frequently?

superintendent	62%
professional	20%
club manager	4%
general manager	2%
don't know	12%

What member of staff at the golf course you play most frequently do you come into most frequent

contact or meet with the most?

club pro	52%
club manager	43%
superintendent	38%
general manager	20%
other	9%
don't know	18%

(note: approximately 90% of the 38% know the superintendent's name)

What are the main problems and bothers at the course you most frequently play?

All golfers	Prob.(x)	Bother(y)
ball marks on greens	23%	79%
poor tees	64%	73%
low drinking water	63%	71%
poor bunkers	59%	70%
high rough	59%	67%
slow greens	58%	60%
too wet	58%	67%

Avid golfers	Prob.(x)	Bother(y)	Diff.(z)
poor bunkers	75%	59%	+16%
recent aeration of greens	67%	51%	+16%
ball marks on greens	86%	73%	+13%
condition of tees	75%	64%	+11%
frost delays	29%	18%	+11%

x-often or sometimes a problem

y-very or somewhat a bother

z-difference between answers of avid vs. all golfers

Have you ever supported an environmental/conservation effort?

golfers	42%
non-golfers	39%

"They are very confident about superintendents' abilities to manage courses in an environmentally responsible manner. This study indicates attitudes are improving. Although it's impossible to say for sure, we'd like to think that educational efforts by the GCSAA, USGA and other golf associations have helped to change misperceptions among players."

"Less than 10 percent of golfers recognize the name GCSAA," observes Richard Norton of the NGF. "But among those who recognize it, their view of the superintendent is much, much more positive."

"People aware of the GCSAA are [also] much more favorably disposed to support

the superintendent. And GCSAA affairs have a definite positive impact on attitudes among golfers."

Results of the image section of the study will be used to guide the GCSAA's public relations programs and to create a baseline to measure the success of future education efforts.

"We're making a substantial investment

in educational programs, including our TV show 'Par for the Course' on ESPN," says Williams. "We want to be able to track the effectiveness of our efforts to ensure we're doing the right things to raise the visibility of our members and enhance their image within golf." □

How important to playability is:

very or extremely

the superintendent's skill	79%
weather	72%
the maintenance budget	59%
the quality of turf equipment	58%
formal education of superintendent	41%

What are the top five factors you use in choosing where you will play?

	Top box	Top 2 boxes
cost/price	39%	72%
tee times	28%	68%
quality	27%	69%
close to home	15%	44%
design	12%	33%

How much do you agree or disagree with this statement: We need to protect the environment.

	Golfers	Non-golfers
agree	90%	87%
neutral	8%	9%
disagree	2%	4%

Views of the superintendent:

	GCSAA(a)	All(b)
supers are most responsible for quality and condition	90%	76%
supers use pesticides responsibly	98%	83%
supers are environmentally responsible	86%	84%

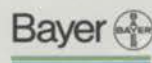
*a-familiar with the GCSAA
b-all golfers*

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Circle 109

Using a soft hammer to educate members

Each year when he meets his new greens committee, Keith Ihms schedules a "getting-acquainted" luncheon to discuss past and future maintenance activities. He follows the luncheon with a tour of his maintenance shop and introduces the committee to his staff, including "the guy who runs the weed eater."

As golf course superintendent at Bent Tree Country Club just north of Dallas, Ihms embraces a grassroots approach to member relations.

"Most of the time, members really want to help, but just don't have the background to understand what we're doing," says Ihms, who's been at Bent Tree two years. "By working up front with the committee and members, fewer people get aggravated. Since the committee changes each year, over a period of time a big percentage of the membership will be well-versed in maintenance procedures. My pro, David Price, is very supportive, too."

Bent Tree has water features on 80 percent of its holes, including number 18. Numerous lakes, five circulating fountains and two waterfalls all come into play. ▼



▲ Keith Ihms, CGCS: Members bring guests to the club at the times they know it will look and play its best.

Besides his monthly meetings with the greens committee, Ihms writes articles for the club newsletter explaining his activities and posts spray, trimming and fertilization schedules on the bulletin board near the pro shop.

He also uses posters available through the GCSAA to explain procedures such as aerification and overseeding, filling in the dates he plans to perform the tasks. "This way, no one gets embarrassed by bringing a guest to the club the day we aerify or the week we overseed," Ihms notes.

Ihms supervises a summer staff of 22, including an assistant for the golf course and an assistant for the clubhouse landscape crew. In addition to a gardener, mechanic, spray technicians and irrigation technicians, he employs three "greens checkers" who do nothing but monitor water levels on greens seven days a week from June through September.

"It's these kinds of specialized activities that most members don't have any knowledge of," Ihms notes. "That's why an educational program is the best way to create a better relationship between club members and the maintenance staff. For the most part, my membership knows what we're trying to do and how we're doing it. They bring guests to

the club at the times they know it will look and play its best."

Disease woes

With water features on 80 percent of its holes, Bent Tree suffered from the dry weather of the summer of 1995. The course design by Dick Nugent features numerous lakes, five circulating fountains and two waterfalls. Its signature hole—number 14—is a stunning par three incorporating an elevated teeing area on top of a cliff overlooking a green that is surrounded by water. Though natural tributaries of White Rock Creek move through both the front and back nine holes, the course still buys city water to fill the supply lakes.

"We were able to keep the fountains and waterfalls running," says Ihms. "But our disease pressure was pretty intense because of the weather. We're on a preventive spray program on greens for both surface and root pythium, brown patch, leaf spot and dollar spot. Take-all patch has begun showing up on a few Dallas courses recently, too. So we stay on a





Bent Tree has 419 bermudagrass fairways and tees, such as number 15. Last year, Ihms skipped overseeding in an effort to clean up *Poa annua*. 'Our bermuda went dormant, but it never went totally off-color last year because of the weather,' superintendent Keith Ihms notes.

fungicide rotation from mid-June through mid-September."

Root pythium affected four of Bent Tree's greens last year. The lab that made the diagnosis recommended a thorough drenching with Koban, with follow-up treatments of Fore and Aliette. Then a preventive regime of Banol was followed the rest of the year.

"Root pythium is just as devastating as surface pythium," says Ihms. "It can be deceiving because you get thinning of turf in the summer anyway. But when you start losing color, too, you take notice. Root pythium can destroy large areas of turf very quickly."

"Once we had initial knockdown of the disease and began a beefed-up preventive program, we didn't have a recurrence before the weather broke in September. When we aerify this spring, I'll use a heavy rate of the Banol to clean up whatever disease may still be there."

Fairy ring also affected small areas last summer. In the past, Ihms merely masked the circular patches of darker green turf by keeping fertility levels high and hand-watering the selected areas. But he tested

ProStar fungicide under an Experimental Use Permit a few years ago and liked it.

"We solid-tine aerified the areas affected with fairy ring...before using ProStar...to make sure we got good contact with the diseased tissue," says Ihms. "Then we used a wetting agent to get the product flushed into the ground; that's the real key. Fairy ring no longer causes major problems for us."

Lots of turf aerification

In addition to solid-tine aerifying selected areas, Ihms core-aerifies greens twice a year and uses a Toro Hydroject biweekly during the summer months. This year, he plans to employ a deep-drill aerification unit to enhance root development with less disruption to the turf. Though six greens were rebuilt to USGA specs in 1992, the rest are the original greens built in 1972. Compaction concerns led Ihms to find an alternative aerification method.

In general, though, Ihms follows an IPM approach. He monitors insect populations until they reach high levels before treating. He also maps grub populations, treating only those areas with known infestations. For weed control, Ihms plans to

switch to a post-emergence program once he becomes familiar with which areas of the course have specific problems.

"Even our fungicide program is an IPM approach. We don't start until weather conditions dictate disease pressure, and then we only spray every 7 to 10 days. Plus, we use a curative spray program the rest of the year. We also use a slow-release nitrogen fertilizer, which promotes microbial activity and allows us to make fewer applications."

Waiting out the weather

By March 25th, Ihms was getting the greens ready for the aerification/soil amendment program. He wants 60 days of root development before the summer heat kicks in.

"We've had some cold weather that's delayed our deep-drill aerification," Ihms reports. "We didn't want to drill when the weather was uncertain. We might not have been able to fill in the holes quick enough. We want to let the cold spells blow through and then go in with soil amendment products. The deep-drill will also help the greens to percolate."

Ihms also plans to flush excess sodium out of the greens with a granulated gypsum product.

"The gypsum can help decrease the base saturation rate, as it allows sodium particles to break off and flush through," says Ihms. "It's critical here, with the water quality, and it's been dry weather over the summer (of 1995) fall and winter."

As a final preparatory step, Ihms wants to steady the soil's calcium-to-magnesium ratio.

"We're trying real hard to get the calcium/magnesium ratio to where it should be, which is 8:1," Ihms explains. To do that, he uses a product called Sul-Po-Mag.

"We're trying to keep base saturation for sodium below two percent. We're at 1.5 percent right now," Ihms says. □

Golf course debate goes by the book

by TERRY McIVER / Managing Editor

The common bond at the GCSAA Environmental Forum in Orlando was the understanding that there is a right way and a wrong way to manage a golf course. No blood was drawn, and no one changed his mind, but it was an interesting evening nonetheless.

The debate over the relative environmental value of a golf course—moderated by TV's professional "man-in-the-middle,"



Debate moderator, Arthur Miller: 'Would I want to be a superintendent?'

Arthur Miller—was a highlight of the association's annual conference Feb. 5-11.

During the forum, a nine-man panel made up of environmentalists, university professors, golf course superintendents and a golf course designer went back and forth for 90 minutes over the pros and cons of

golf. Each panelist made a point, and some points were made often, especially the belief that superintendents are genuine environmentalists.

Golf is not a game

"It's a job of challenges," said Tim Hiers, CGCS, manager of Colliers Reserve in Naples, Fla.

"You work with nature, but it's difficult to deal with the perceptions of people who don't understand our business. If you see what

golf courses are doing around the country, you'd change your mind" about golf being bad for the environment.

"Keep in mind that there are genuine water, fertilizer and resource management concerns," countered Curt Spalding of Save the Bay, Providence, R.I., whose main concern was that many superintendents—such as those in his state—can be better stewards and more responsive to an inquiring, concerned public.

"Not everyone is going to be a national award winner," agreed Spalding. "They don't have the resources to do it or the aptitude to do it. But certainly everyone can do better than they're doing now. You can save money, use less pesticides, use less water, and that's going to make your profit margin better."

"Most superintendents are already resource managers," coun-



▲ Hiers, right, and Hurdzan: Superintendents are environmentalists, and easy targets for uninformed critics.

tered Hiers, "and they care deeply about the environment. They're also business people. They have to account for every penny. To say it's an exceptional few [who are good stewards] is not accurate. Most people don't stay around long if they've got dead fish, dead birds or something's over budget."

No more courses!

Sierra Club spokesman Mark Massara said he would like to see at least a temporary moratorium on all golf course construction.

"From the lay perspective, the legacy of golfing in the United States is one of agricultural conversion, real estate speculation, destruction of wildlife habitat, loss of water quality and wetlands, and massive bird kills," asserted Massara. "Do we really want to concentrate on building new and better and more environmentally-sensitive golf courses," asked Massara, "or should we go to work on the 17,000 that exist already and try to improve them?"

"The golf course is a symbol of population growth that's easy to attack," replied Hurdzan. "If we use emotional arguments to try to deny the expansion of a golf course, maybe they won't build that extra road, or urban area [to go along with the course]."

According to Hurdzan, golf courses probably represent less than one or two percent of the entire landscaped area in the U.S., "and they're managed by college-educated professionals who are devoting their lives to a safe environment." **LM**

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Circle 116

PAGE 2 L ▶

The growing role of the landscape architect in residential design/build

PAGE 7 L ▶

Grubs: get 'em before they grow fat and sassy, Dr. Shetlar says.

[LAWN/LANDSCAPE]

Gary, who's sprayed more than a few lawns in his time, tells me about the time he was standing inside a customer's front door writing out a service order when the homeowner's hound walked over, cocked his leg and watered Gary's trouser leg.

"But here's a better one," says Gary. "Let me tell you about this crazy Shih Tzu that almost caused me to have a heart attack right there on this lady's lawn."

I interrupt him.

"What's a Shih Tzu?" My curiosity's growing because I can see that Gary's getting himself in a fine fever remembering the details.

"It's one of those fancy little dogs with short legs. Got the hair hanging down. Kinda yappy," he says. "You know, the kind that women like to keep in the house."

"So what about the Shih Tzu?" I ask.

"Well," continues Gary, "the one I'm talking about wasn't in the house.

It was in the backyard, but I didn't know this. Always before it was in the house. So when I open the gate to treat the backyard, the dog runs out. It just takes off and before I know it, it's around the house and gone. I don't know where it's gone.

"What am I gonna do? I gotta get the lady's dog back."

So Gary says he ran to the front of the house and he started calling for the dog, except he didn't know its name. Then he started walking down the sidewalk peering into peoples' backyards hoping to spot the little critter. But it's like it had just vanished into thin air.

After about a half hour or so, Gary says he went back to his truck and called on his mobile radio for his helper, and since his pal was in the neighborhood treating other lawns, in no time at

all he was there looking for the Shih Tzu, too.

The two of them resumed the search, but they still couldn't find the dog.

"Finally, I go to the neighbor's house and the neighbor tells me how I can contact the lady who owns the dog," says Gary. "She's at her office. I call. She says she'll come right home. She gets home in about 10 minutes or so, calls the dog, and right away here comes the dog out from under a bush in the neighbor's yard. It's right there. Maybe it was afraid. Maybe that's the reason it was hiding.

"The dog's real happy; it's smiling; its tail is wagging," says Gary.

"It's been sitting there the whole time watching me, I guess."

"Was your customer angry?" I ask.

"No, not at all," says Gary. "She laughed about it, put the dog in the house and went back to work.

"She's still a customer, a good one. But it gave me a few gray hairs. Here...see for yourself.

"And it cost me and my partner a couple of hours, so we had some catching up to do the rest of the week."

Got a "shaggy dog" (or humorous) service story you want to share? Telephone: (216) 891-2636. Fax: (216) 891-2683. E-mail: 75553.502@compuserve.com. **LM**

Shih Tzu on the loose: a 'shaggy dog' tail/tale (?)



Ron Hall

RON HALL
Senior Editor

Today's architects: spearheading top-quality residences

by RON HALL / Senior Editor

Wanted: Landscape architect for residential projects. Must be able to gain confidence—including friendship—of homeowner clients. Strong sales ability. Superior supervisory skills. Ability to work hand-in-hand with co-workers and

contractors alike while developing and executing construction projects of various sizes (usually several at various stages

of completion simultaneously).

Oh, by the way, applicant must have proven design and site planning skills.

If you think that's asking too much of today's landscape architect (LA), the residential design/build landscape market may be passing you by.

Judson Griggs of Lied's Landscape Design & Development in Sussex, Wis., detailed what's expected of today's LA at last winter's ALCA Conference.

It opened a few eyes, judging by the questions that flowed from some of the 200-plus contractors in the audience.

Griggs, himself, is a landscape architect. He's one of 11 on the Lied's staff. (He's also 1996 president elect of ALCA.)

But, to describe Griggs or any of the others on that staff, as an LA is like describing Dan Marino as "just a football player."

They're, in effect, the quarterbacks in Lied's residential design/build business. It's a market in which the company excels, but it's a tough market.

"The residential work that we do is involved and it's challenging," says Griggs. "When I talk to clients,



This Lied's project shows what a dramatic and positive impact a well-designed and installed landscape can have on a home. A landscape architect may have to do a lot of client hand-holding in a residential job like this. The benefits—higher profits, customer satisfaction and loyalty—are well worth it.



I'm talking about dealing with their outdoor environment...the entire outside of their property."

Although some contractors chase commercial design/build work because it's generally a larger ticket item and perceived to present fewer hassles, residential design/build has a lot going for it.

"There are higher profits in residential design/build work," says Griggs. "But you're going to work for it; you're going to work *hard* for it."

Also, residential work comes at a steadier pace. It's not as likely to follow boom or bust fluctuations in the economy.

Another difference: while commercial property owners look at the competitive advantage that landscaping can give them (they see it in light of return on investment), homeowners approach landscaping more emotionally.

That fact dictates that residential design/build requires more hand-holding from the landscape provider, more patience, and usually more meetings.

Crucial to this process, the LA must learn—really *learn*—what each homeowner wants, says Griggs. The LA must build a bond of trust and confidence in each client and, in fact, make the process fun and enjoyable for that client.

"You're dealing with feelings and emotions, and you've got to understand your clients as people," says Griggs.

He says he sees two market trends that favor the continued growth of residential design/build.

Busy two-income families are increasingly willing to pay somebody else for landscapes and services. Also, families are "cocooning" in their homes. Some have safety concerns about going out at night; others are too tired.

"Comfort and convenience are more important than price, and I see that as an opportunity for us," says Griggs.

Lied's relies strongly on its LAs to meet this opportunity.

Their involvement in a project begins as early as possible. Ideally, it starts with meetings with architects and builders as the home itself is being planned and designed.

At Lied's, anyway, the LA sells, designs, does the estimates, and then serves as the

▶ *'When I talk to clients, I'm talking about dealing with their outdoor environment, the entire outside of their property.'*
— Judson Griggs,
Lied's in Wisconsin.



liaison between client and production to the project's completion.

One of the most crucial steps in this process is the handoff from sales/design to construction. That's when the build crew gets the job packet with plans, bid sheets and any other information specific to that job.

"There can be no surprises to the client," he stresses.

Griggs says it's a good idea to introduce homeowners to foremen and crew leaders as construction commences. Hopefully, the client and construction leaders will form a link. But the client's primary contact remains with the LA.

While most new LAs come to Lied's with strong design skills, they generally work as design assistants alongside more experienced LAs first. Then, as they learn the company's philosophy, they're given more sales responsibilities.

"We seem to like to make our work complex and complicated," says Griggs, half joking. □

8 steps to residential success

Be recognized as the best in a particular market niche. High-end design/build? Turf renovation? Stone work? Water features?

Develop a client-sensitive design staff. If, for instance, your company's forte is high-end, the design staff must be able to deal with clients on their level, including being aware of and involved with community events like symphonies, charity functions, and service organizations.

Keep clients' interests foremost. "Never say to a client, 'if this was my house, I would do it this way,'" says Judson Griggs of Lied's Landscape Design. "It's not your house. What you want to do is deliver what the client wants."

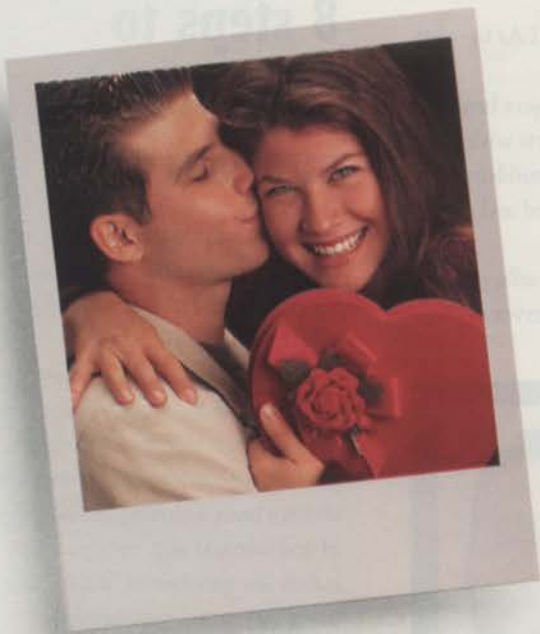
Learn to work with tough, demanding clients, people who are used to getting what they want, but nevertheless recognize value and quality.

Base all decisions on client satisfaction. Discover what's important to individual clients, what they want to get out of their landscapes. Ask for clarification whenever you feel it's needed. Seek specific feedback.

Sell benefits, not features. Homeowners generally don't care about the technical features of, say, a water garden or a brick patio. They want to know how it will give them pleasure and relaxation.

Deliver timely service, but don't sacrifice service for expediency. "If you continually say 'yes, yes, yes' and you can't meet your commitments, you will develop a problem," says Griggs.

Adapt with the market. Homeowners read about beautiful landscapes in colorful, consumer magazines. Increasingly, they're demanding features such as waterfalls, pools, spas, irrigation systems, and lighting systems. □



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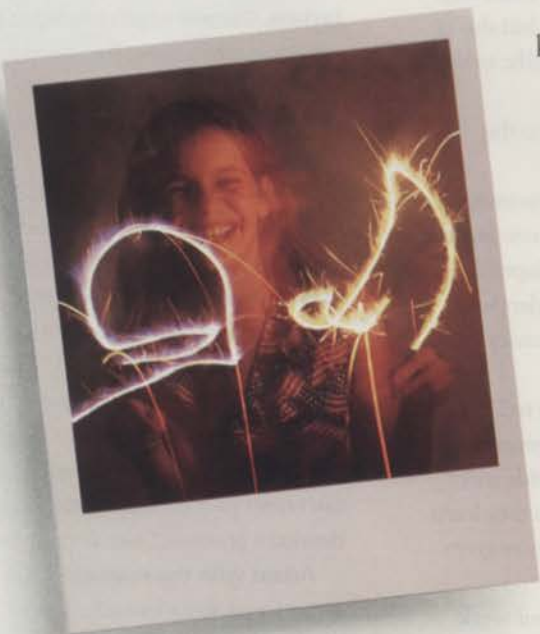


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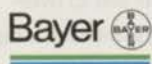
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Grubs: get'em before they grow fat and sassy

Two promising new products—one a molting inhibitor, the other a biological—will soon be available in the battle against turf-damaging grubs, says Ohio State University entomologist Dr. David Shetlar.

by RON HALL / Senior Editor

The best way to control white grubs with chemical products is to get them when they're small and vulnerable.

Attempting to eliminate "big, fat and sassy third-instar grubs," is a lot harder and probably won't result in satisfactory control, says Dr. David Shetlar, landscape entomologist at The Ohio State University.

This is as true for a new material, like imidacloprid (Bayer's Merit), as it is for more familiar chemical controls.

Imidacloprid, explains Shetlar, affects grubs differently than other materials. When a grub ingests imidacloprid, the messages traveling across the grub's nerve synapses are blocked; the grub quits feeding.

This is a catastrophe for a tiny, hungry first-instar grub. But for a plump third instar that's migrating deeper into the soil to overwinter anyway, it's not such a big deal. Products such as diazinon, isazophos (Triumph) and trichlorfor (Dylox, Proxal) are more effective as late-season, curative-type products against these bigger grubs.

But even with favorable conditions, chemical controls aren't always going to be 100 percent effective, cautions Shetlar.

Common reasons for failure:



'Understand which grub you're dealing with, and what size it'll be when you're dealing with it.'

—Dr. David Shetlar, landscape entomologist

- ▶ product wasn't applied at the proper time;
- ▶ unusually heavy grub population;
- ▶ material wasn't watered in;
- ▶ too much thatch;
- ▶ or a combination of any of these or other related factors.

The good news is that turf managers have a growing selection of effective grub control products—and two more are on the way.

One of these is halofenozide, a molecule developed jointly by American Cyanamid and Rohm & Haas Co.

Halofenozide (trade name Raster) is a new class of chemical that interferes with the molting process of grubs, but reportedly has little effect on non-target species. Because of this, and because of its very low mammalian toxicity (LD₅₀ of 2850), it's on the U.S. EPA's registration fast track. Plans are to make it available for the 1997 season.

The other product being readied for the turf market is a "buihui strain" of *Bacillus thuringiensis* (Bt) developed by Mycogen. Its trade name is M-Press, and it, too, provided excellent control in test plots monitored by Shetlar and fellow entomologist Dr. Harry Niemczyk.

"For those people who are trying to deliver organic lawn care, there is real hope for grub control. We think this new Bt, M-Press, will be an important material for them," says Shetlar.

While the grub of the Japanese beetle remains the number one target of these products, the root-eating larvae of other large beetles are just as destructive in selected areas of the United States and Canada.

These include the chafers (southern and northern masked, and European), the black turfgrass ataenius

cont. on page 8L



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cont. from page 6L

Early treatment stops billbugs, too

Although white grubs may be your primary target, an application of imidacloprid (Merit) in May or early June controls bluegrass billbugs, too, says Dr. Harry Niemczyk.

Niemczyk, speaking at the Ohio Turfgrass Conference this past winter, explained that billbugs lay their eggs inside the stems of grass plants in late April-early May in Ohio. As they hatch, the billbug larvae feed within the stems and hollow them out. As they grow, they start feeding in the crowns. Because imidacloprid is taken up by grass plants, the larvae, in eating the grass, take the material into their system and die.

"Maybe it's a week or 10 days before Merit is picked up by the roots of the plant and translocated up into the plant, but it (Merit) is definitely systemic," he said. "If the Merit is there, the little larva is easy to kill."

He suggested that superintendents with billbug problems make applications in early May, although control is generally good with applications through June. Depending on their chemical budgets, they probably should concentrate on tees and greens first, he suggested.

As part of his presentation, Niemczyk showed slides of several golf courses in Ohio where applications of imidacloprid dramatically improved turfgrass on tee banks and around sand traps.

and, to a lesser degree, the Oriental, Asiatic garden, and the green June beetle grubs.

Each variety of beetle has a distinct life cycle but, generally, all can be controlled with properly-timed applications.

In Ohio at least, May, June and July applications of Merit and the experimental Raster provided almost 100 percent control, Shetlar says. But when the products were applied in mid-August, control fell off somewhat.

"You can't wait for remedial treatment for these kinds of materials," he says. "Put them down early to get the best efficacy."

The reason is simple. The larger the grub, the more material it takes to kill it. A third-instar grub can be as much as 70 to 80 times the body weight of a newly-hatched grub, points out Shetlar. It's many times more difficult to control. **LM**

—Dr. Shetlar's comments came from presentations at the Ohio Turfgrass Conference and the OSU Short Course this past winter.

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For more information, contact Grasshopper at (316) 345-8621 and tell them you saw it in LANDSCAPE MANAGEMENT, or

Circle 294



Mower design directs noise and heat away from driver

The new Ransomes T-Plex 185 triplex mower is built for operator comfort. The mower's rear-mount engine design directs noise and heat out and away from the operating position.

Three fully floating cutting heads follow ground contours for a high-quality cut and smooth finish. The heads are interchangeable with other Ransomes mowers, including the 305 and 405 fairway models.

Reel to bedknife adjustments can be made by hand, thus reducing downtime for maintenance.

Total cutting width is 71 inches. An optional 5-blade fixed head cutting unit is available to cut longer grass.

For more information, phone (800) 228-4444 and tell them you saw it in LANDSCAPE MANAGEMENT, or

Circle 295

Classic herbicide now comes in water-soluble formulation

Trimec Classic broadleaf herbicide is now available in a dry water-soluble formulation. This new sprayable herbicide, packaged in pre-measured water-soluble bags,

performs like liquid Trimec Classic but has handling, economic and environmental advantages, PBI/Gordon says.

The new dry product dissolves in cold water with minimal agitation and has little, if any, of the odor usually associated with amine products. Like the liquid product, Trimec Classic DSC contains the same ratio of 2,4-D, MCPP and dicamba.

For more information, phone (800) 821-7925 and tell them you saw it in LANDSCAPE MANAGEMENT, or

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This trimmer is high in value and performance

The Maruyama ML23S string trimmer is lightweight—just 10.3 lbs.—and powerful—with a 22.5cc exclusive M-Line engine. It also has features like a tap for cord cutting head with twin .095 lines and a lift-type carburetor for easy starting.

The ML23S has Maruyama's popular anti-vibration system and a design that places emphasis on operator comfort.

The MT23 powerhead can be equipped with straight- and curved-shaft string trimmers, along with an edger, hedgetrimmer, blower or tiller.

For more information, phone (206) 885-0811 and tell them you saw it in LANDSCAPE MANAGEMENT, or

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Three new grasses have wide benefits

Three new turfgrass cultivars are available from Lofts Seed:

- Rebel III turf-type tall fescue: deep, dark green color that performs well in southeast transition zones and westward across the U.S.; does well from full sun to dense shade; available in limited supply this season.

- L-93 creeping bentgrass: has natural dollar spot resistance; also number one in overall turfgrass quality and attractiveness in Rutgers University trials; performs well on closely-clipped putting greens or IPM-managed fairways and tees where dollar spot is a concern; no excessive thatch or puffiness; available in limited quantities.

- Princeton 105 (P-105) Kentucky bluegrass: produces an aggressive, dense turf; moderately dark color; perfect for quick repairs to sports fields and rec areas; maintains good summer density and is resistant to most troublesome diseases.

For more information, phone (800) 526-3890, ext. 250 and tell them you saw it in LANDSCAPE MANAGEMENT, or

Circle 298

Reel innovation lets you make quick, easy changes

The new Jacobsen Greens King V features a FlashAttach reel. Changing from 11-blade reels for greens to seven-blade reels for tees is accomplished by pulling a pin and moving reel attachment forward.

The Greens King V is powered by a 19 hp Kubota diesel, or high output 18 hp Briggs & Stratton Vanguard gas engine—take your choice.

Power steering and a rear wheel that turns inside the front wheel's radius has made it easier for operators to follow the most difficult curves and contours, Jacobsen claims.

For more information, call (414) 637-6711 and tell them you saw it in LANDSCAPE MANAGEMENT, or



Circle 299

New formulation of popular post-emergent

Acclaim Extra herbicide is a water emulsion herbicide containing 0.57 lb. of active ingredient per gallon. It controls annual and perennial grass emerged weeds.

Acclaim Extra will replace Acclaim 1EC because it can be used at lower application rates: 3.5 oz./acre or 0.08 oz./1000 sq. ft.

"Acclaim Extra covers 14 percent more area than the old formulation," says market

manager George Raymond. "In addition, the signal word has been reduced from 'warning' to 'caution.'"

For more information, phone (302) 892-3030 and tell them you saw it in LANDSCAPE MANAGEMENT, or

Circle 300

Trimmer/brushcutter has heavy-duty anti-vibe system

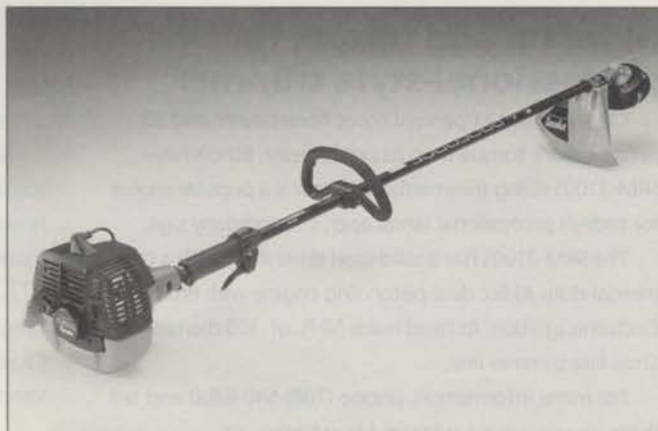
Tanaka's new commercial trimmer/brushcutter, the TBC-2510, provides professionals with all the most important features that you demand.

Weighing only 11.6 lbs., the TBC-2510 contains a heavy-duty anti-vibration system located at the ending/shaft mount to provide smooth cutting power. The machine's 24cc engine was tested to produce 1.3 hp and last more than 1,500 hours.

Other features: a forged steel connecting rod and a large ball bearing-supported crankshaft, a new-generation Brain autofeed cutting head that features a new interlocking cap and simplified line length adjustment system.

For more information, phone (206) 395-3900 and tell them you saw it in Landscape Management, or

Circle 301



Popular pre-emergent now registered in Calif.



Barricade pre-emergence herbicide from Sandoz Agro Inc. has been registered by the California EPA.

In landscaping/lawn care situations, Barricade delivers comparatively long residual control of crabgrass, goosegrass, *Poa annua* and 27 other problem grasses and broadleaf weeds. Using up to 75% less active ingredient than other pre-emergents, a single application can last up to 26 weeks.

In golf course situations, it delivers what Sandoz calls "superior" performance in controlling weeds on fairways, tees and roughs. And its flexibility allows for fall, spring or split applications.

Circle 302

Two herbicides help control tough weeds

Riverside Simazine 90DF can now be used in a tank mix with herbicides such as Gramoxone, Roundup, Solicam and Surlan for a wider spectrum of post-emergence weed control in southern turfgrasses. Simazine is most commonly used to control weeds like burclover,

chickweed, dandelion, speedwell, yarrow, crimson clover, lambsquarter, ragweed and vetch.

Also, Riverside Phenoxy 88 is great for controlling tough weeds in turfgrass grown for seed and ornamental turfgrass. It is a 2,4-D acid formulation that is good at controlling weeds like bindweed, chickweed, cocklebur, lambsquarters, knotweed, ragweed and sunflowers in turf.

Both products are sold by Terra International. For more information, phone (712) 277-13540 and tell them you saw it in

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More hp and torque for this professional-style trimmer

Churning out 11 percent more horsepower and 35 percent more torque than its predecessor, Echo's new SRM-3100S string trimmer/brushcutter is a popular choice for today's professional landscaper, the company says.

The SRM-3100S has a solid-steel drive shaft with a commercial-duty 30.5cc dual-piston ring engine with Pro-Fire Electronic Ignition. Its head holds 50 ft. of .105 diameter Cross-Fire trimmer line.

For more information, phone (708) 540-8400 and tell them you saw it in LANDSCAPE MANAGEMENT, or

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Submit resume with salary history to:

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Stone Mountain, GA 30083
Tel: (770) 938-8080
Fax: (770) 934-0919

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June 1996 issue.

FOR SALE

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September 1996	8/8
October 1996	9/6
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Dan Hoke, **LANDSCAPE MANAGEMENT**, 7500 Old Oak Blvd., Cleveland, OH 44310.
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I would like to receive (continue receiving)
LANDSCAPE MANAGEMENT each month: Yes no

Signature: _____ Date: _____

1. MY PRIMARY BUSINESS AT THIS LOCATION IS: (check only ONE in either A, B or C)

A. LANDSCAPING/GROUND CARE AT ONE OF THE FOLLOWING TYPES OF FACILITIES:

- | | |
|---|--|
| 01 <input type="checkbox"/> 05 Golf Courses | 08 <input type="checkbox"/> 40 Private/Public Estates & Museums |
| 02 <input type="checkbox"/> 10 Sport Complexes | 09 <input type="checkbox"/> 45 Condominiums/Apartments/Housing Developments/Hotels/Resorts |
| 03 <input type="checkbox"/> 15 Parks | 10 <input type="checkbox"/> 50 Cemeteries/Memorial Gardens |
| 04 <input type="checkbox"/> 20 Rights-Of-Way, Maintenance for
Highways Railroads & Utilities | 11 <input type="checkbox"/> 55 Hospital/Health Care Institutions |
| 05 <input type="checkbox"/> 25 Schools, Colleges & Universities | 12 <input type="checkbox"/> 60 Military Installations & Prisons |
| 06 <input type="checkbox"/> 30 Industrial & Office Parks/Plants | 13 <input type="checkbox"/> 65 Airports |
| 07 <input type="checkbox"/> 35 Shopping Centers, Plazas & Malls | 14 <input type="checkbox"/> 70 Multiple Government/Municipal Facilities |
| | 15 <input type="checkbox"/> Other (please specify) _____ |

B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:

- | | |
|--|---|
| 16 <input type="checkbox"/> 105 Landscape Contractors (Installation & Maintenance) | 20 <input type="checkbox"/> 125 Landscape Architects |
| 17 <input type="checkbox"/> 110 Lawn Care Service Companies | 21 <input type="checkbox"/> 130 Land Reclamation & Erosion Control |
| 18 <input type="checkbox"/> 112 Custom Chemical Applicators (Ground & Air) | 22 <input type="checkbox"/> 135 Extension Agents/Consultants for Horticulture |
| 19 <input type="checkbox"/> 120 Tree Service Companies/Arborists | 23 <input type="checkbox"/> 140 Irrigation Contractors |
| | 24 <input type="checkbox"/> Other Contractor or Service _____ |

C. SUPPLIERS:

- 25 210 Sod Growers, Turf Seed Growers & Nurseries
26 215 Dealers, Distributors, Formulators & Brokers
27 220 Manufacturers

2. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR TITLE? (check ONE only)

- 28 10 EXECUTIVE/ADMINISTRATOR: President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Director of Physical Plant
29 20 MANAGER/SUPERINTENDENT: Arborist, Architect, Landscape/Ground Manager, Superintendent, Foreman, Supervisor
30 30 GOVERNMENT OFFICIAL: Government Commissioner, Agent, Other Government Official
31 40 SPECIALIST: Forester, Consultant, Agronomist, Pilot, Instructor, Researcher, Horticulturist, Certified Specialist
32 50 OTHER TITLED AND NON-TITLED PERSONNEL: (please specify) _____

3. SERVICES PERFORMED: (check ALL that apply)

- | | |
|--|---|
| 33 <input type="checkbox"/> A Mowing | 41 <input type="checkbox"/> I Landscape/Golf Design |
| 34 <input type="checkbox"/> B Turf Insect Control | 42 <input type="checkbox"/> J Turf Weed Control |
| 35 <input type="checkbox"/> C Tree Care | 43 <input type="checkbox"/> K Paving, Deck & Patio Installation |
| 36 <input type="checkbox"/> D Turf Aeration | 44 <input type="checkbox"/> L Pond/Lake Care |
| 37 <input type="checkbox"/> E Irrigation Services | 45 <input type="checkbox"/> M Landscape Installation |
| 38 <input type="checkbox"/> F Turf Fertilization | 46 <input type="checkbox"/> N Snow Removal |
| 39 <input type="checkbox"/> G Turf Disease Control | 47 <input type="checkbox"/> O Other (please specify) _____ |
| 40 <input type="checkbox"/> H Ornamental Care | |

4. WHAT IS YOUR ANNUAL BUDGET FOR EQUIPMENT, CHEMICALS, SUPPLIES? (please check one)

- 48 1 Less than \$50,000
49 2 \$50,000-\$100,000
50 3 \$100,001-\$250,000
51 4 \$250,001-500,000
52 5 More than \$500,000

101	119	137	155	173	191	209	227	245	263	281	299
102	120	138	156	174	192	210	228	246	264	282	300
103	121	139	157	175	193	211	229	247	265	283	301
104	122	140	158	176	194	212	230	248	266	284	302
105	123	141	159	177	195	213	231	249	267	285	303
106	124	142	160	178	196	214	232	250	268	286	304
107	125	143	161	179	197	215	233	251	269	287	305
108	126	144	162	180	198	216	234	252	270	288	306
109	127	145	163	181	199	217	235	253	271	289	307
110	128	146	164	182	200	218	236	254	272	290	308
111	129	147	165	183	201	219	237	255	273	291	309
112	130	148	166	184	202	220	238	256	274	292	310
113	131	149	167	185	203	221	239	257	275	293	311
114	132	150	168	186	204	222	240	258	276	294	312
115	133	151	169	187	205	223	241	259	277	295	313
116	134	152	170	188	206	224	242	260	278	296	314
117	135	153	171	189	207	225	243	261	279	297	315
118	136	154	172	190	208	226	244	262	280	298	316



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APRIL 1996

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TITLE _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
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I would like to receive (continue receiving)

LANDSCAPE MANAGEMENT each month: Yes no

Signature: _____ Date: _____

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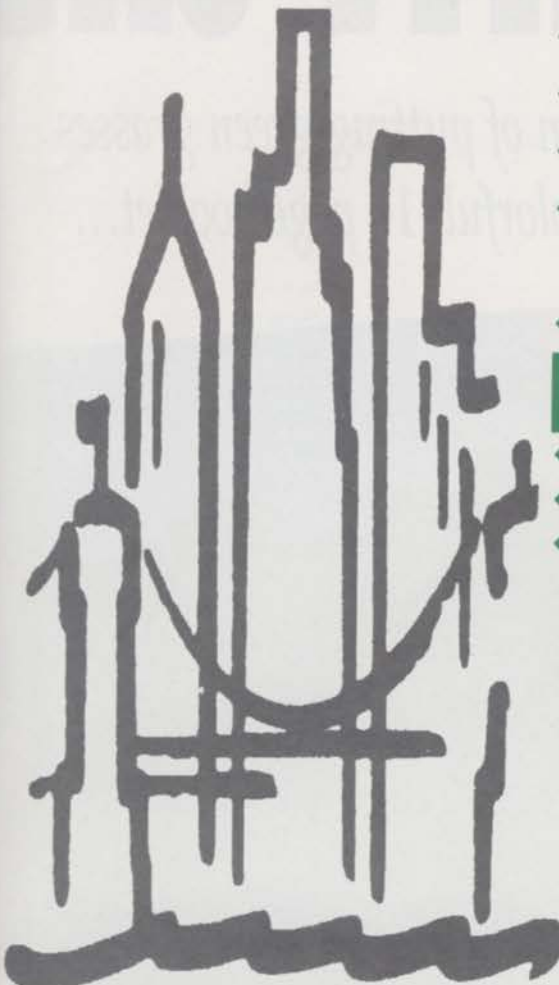
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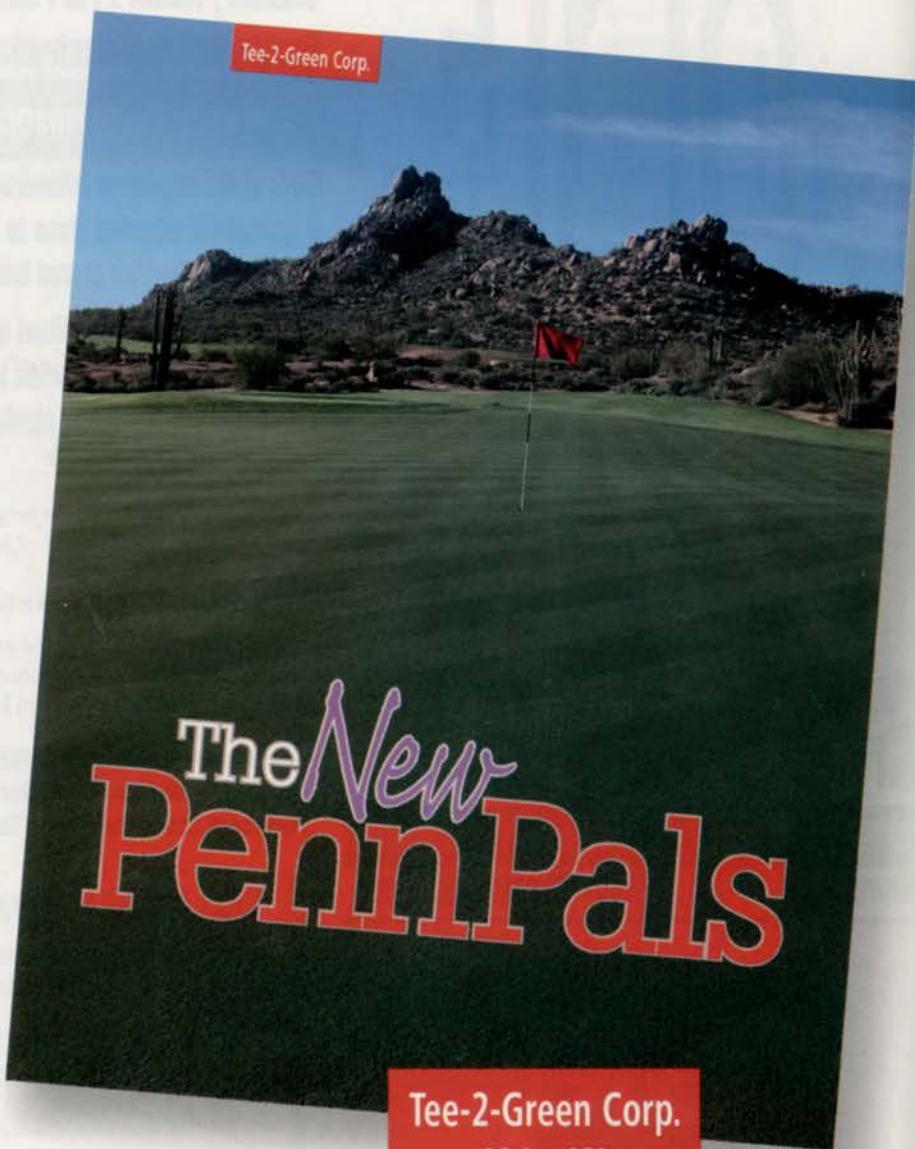
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