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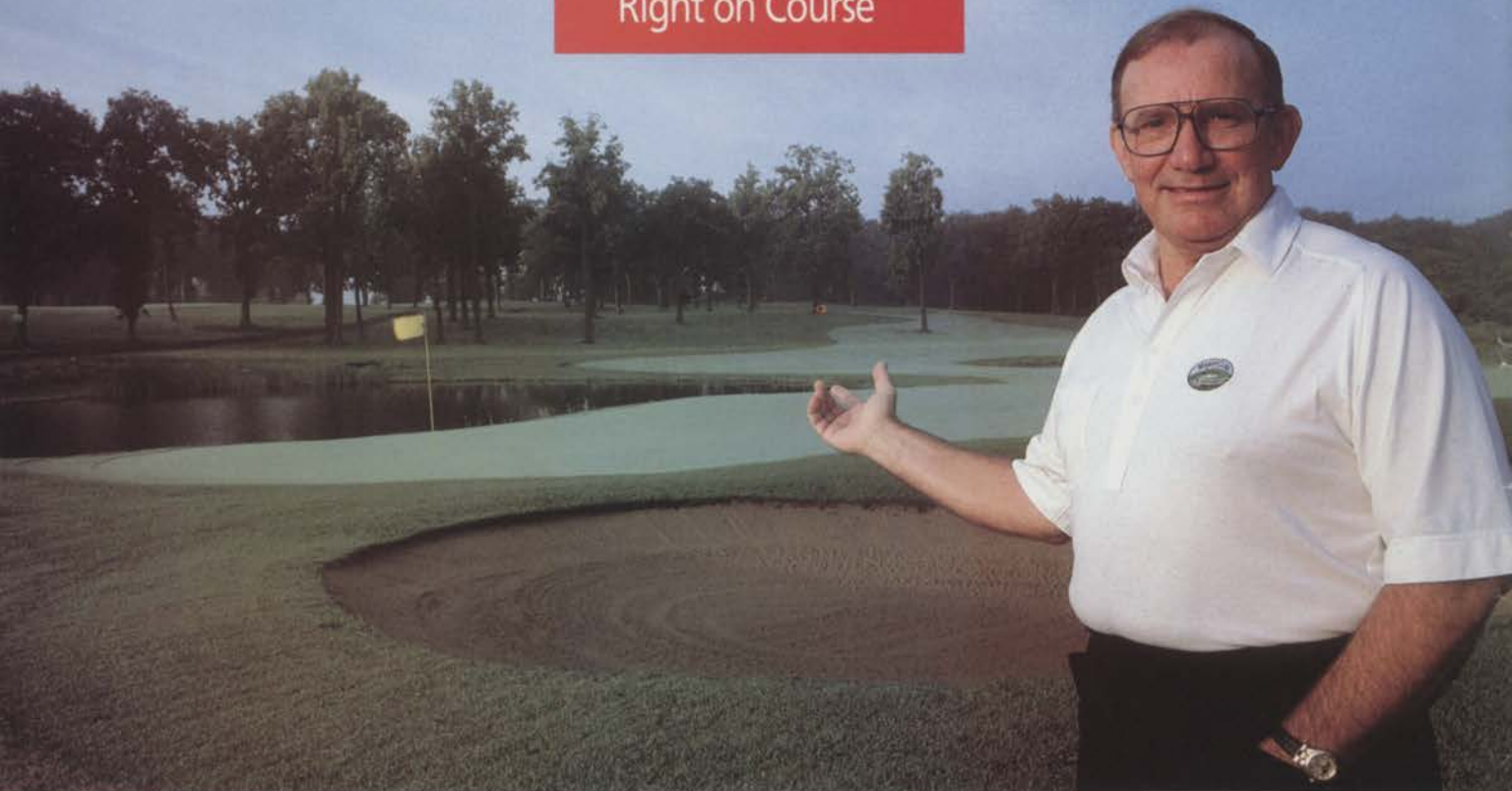
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AS WE SEE IT

RON HALL, SENIOR EDITOR



Is the struggle for 2,4-D finally nearing a climax?

Now, almost 12 years after the initial data call-in for the popular herbicide 2,4-dichlorophenoxyacetic acid (2,4-D), a frightening prospect looms for all of us.

That prospect is that we'll lose, one by one, chemical compounds that contribute to the well-being and happiness of just about everyone in the United States.

We'll lose these compounds not because anybody can conclusively prove that their proper use poses any real health risk to any of us. But because of the astronomical expense of proving—over and over again—that they don't pose *any* risk.

We'll lose them for a very wrong reason: money.

That's why the battle over 2,4-D has been so protracted. Industry has been willing to put up the money to prove that the compound deserves to remain on the market. Otherwise, 2,4-D would have been long gone. You can bet on that.

Sales of 2,4-D are substantial, so substantial that manufacturers and suppliers feel they can afford to defend it. The compound, available since 1948, is the most widely used herbicide in the world.

The Industry Task Force on 2,4-D Research Data, now known as Task Force I, spent \$4 million to develop data required by the U.S. EPA's 1981 data call-in on the acid form of the compound. Originally there were 13 manufacturers or formulators in that group.

In 1988 when the EPA issued a data call-in on the acid, ester and amine salt forms, Task Force II—now only six members strong—figured to shell out an additional \$10 million.

Today, the remaining four members on the 2,4-D Task Force expect to spend \$21 to \$22 million (over the \$4 million spent by Task Force One) defending the herbicide and meeting EPA's study requirements. Even, so the herbicide's survival is hardly assured.

Obviously, other compounds with

much smaller uses will never survive the reregistration process, with or without challenges to their safe use.

The next step in the 2,4-D saga: the U.S. Environmental Protection Agency says it will convene a review panel in 1993 to consider several National Cancer Institute (NCI) farm worker studies that suggest a link between herbicide use and a rare form of cancer, non-Hodgkins lymphoma. The results of these epidemiological studies have come under increasing skepticism as newer studies raise serious questions about the validity and reliability of the methodology used in the NCI work.

Indeed, 2,4-D is being scrutinized from every possible angle.

There have been over 800 major 2,4-D studies published the past four years, and the number of epidemiological studies pertinent to 2,4-D now exceeds 90.

Obviously, the EPA review panel, to get a complete health risk picture of 2,4-D, must review all pertinent data and not just the suspect NCI studies.

Meanwhile, 2,4-D's defenders, in yet another compromise with the EPA, recently agreed to fund a \$1 million 2,4-D user education effort.

The EPA, like the proverbial butcher with his thumb on the scale, has tipped the balance away from the benefits side of the risk/benefit equation.

That's scary enough, but the enormously expensive, repetitive and unnecessary research studies required for reregistration will likely spell the doom of many less-used chemical products.

Ron Hall

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COVER FEATURE

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On the cover: Oregon fine fescue bunkers and Pennncross greens adorn The Wolf Run Golf Club, Zionsville, Ind.; Joe Kosoglov, superintendent. (Photo by Larry Kassell)

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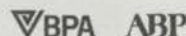
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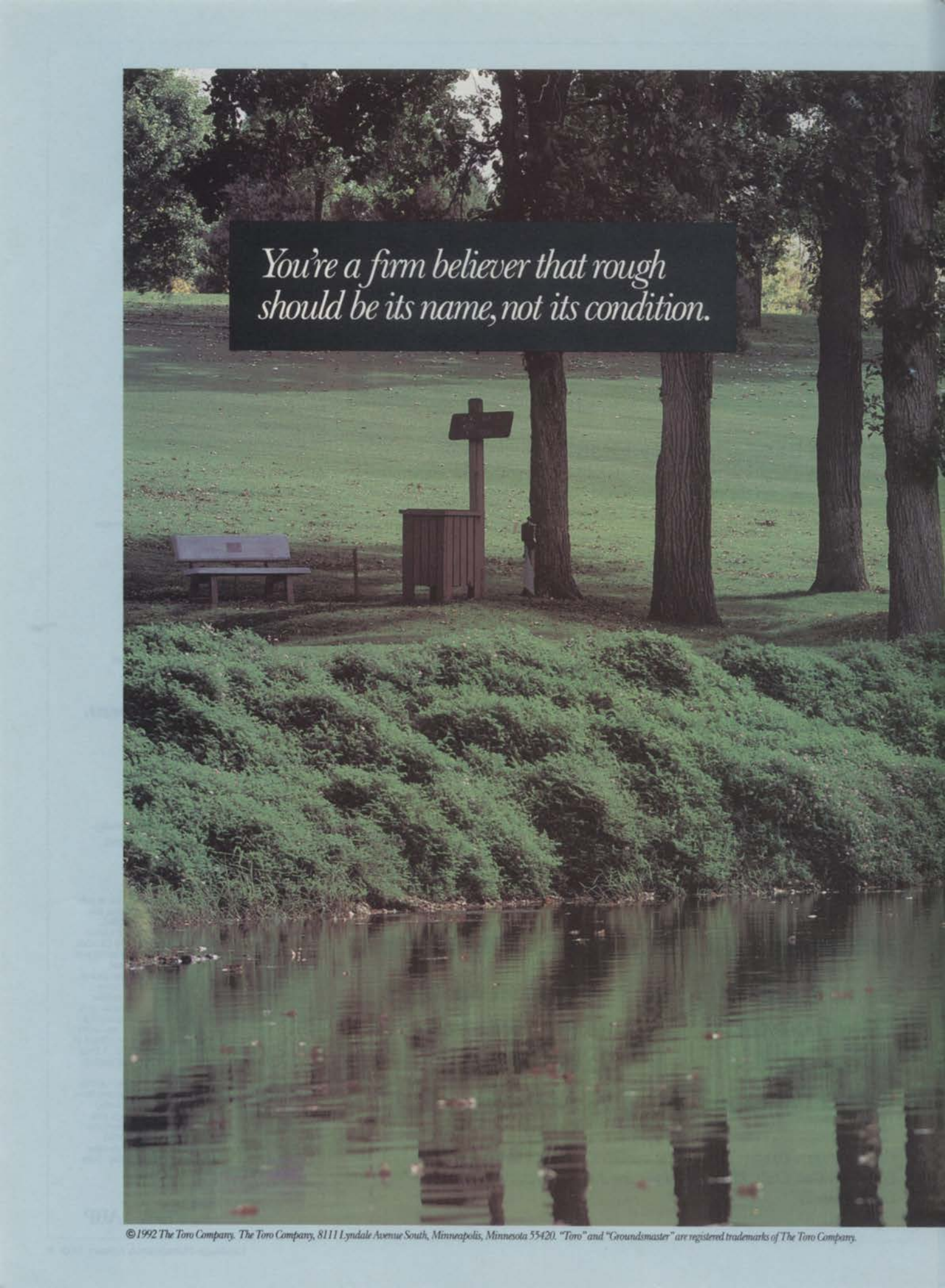
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A photograph of a park scene. In the foreground, a calm pond reflects the surrounding greenery and trees. A dense line of bushes separates the pond from a grassy area. In the middle ground, there is a wooden bench, a small wooden structure, and a tall wooden signpost with a cross-shaped top. Several large trees stand in the background, their trunks and foliage visible. The overall atmosphere is peaceful and natural.

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Re-making problem holes: Is it worth the risk?

Whether it's a re-design or re-construction or just plain tinkering, superintendents feel that—at the very least—some of it is their responsibility.

■ You—the golf course superintendent—have a problem hole. It may be a bunker that won't hold sand, or one that holds too much water. It may be a tee that is often pummelled with balls from an adjacent green. It may be a green that is infested with weedy grasses.

Whatever the problem, you have to make a decision: try to change the hole by yourself, with existing staff; hire additional staff; or hire specialists like a golf course architect and/or landscape construction company.

The temptation is to try and do it yourself, if the project isn't an overly large one.

"Every golf course superintendent feels (some re-design) is in his realm of responsibility," says Mark Jarrell of Palm Beach National Golf & Country Club in Lake Worth, Fla.

Architects sometimes disagree with that concept. Like Dr. Mike Hurdzan of Hurdzan Golf Course Design in Columbus, Ohio.

Taking a risk—"Does the superintendent want to put himself in the middle of the politics of his club?" Hurdzan asks. "I feel that if 51 percent of the people like the job, I've done it well. If I were a superintendent, I would not want to take that risk.

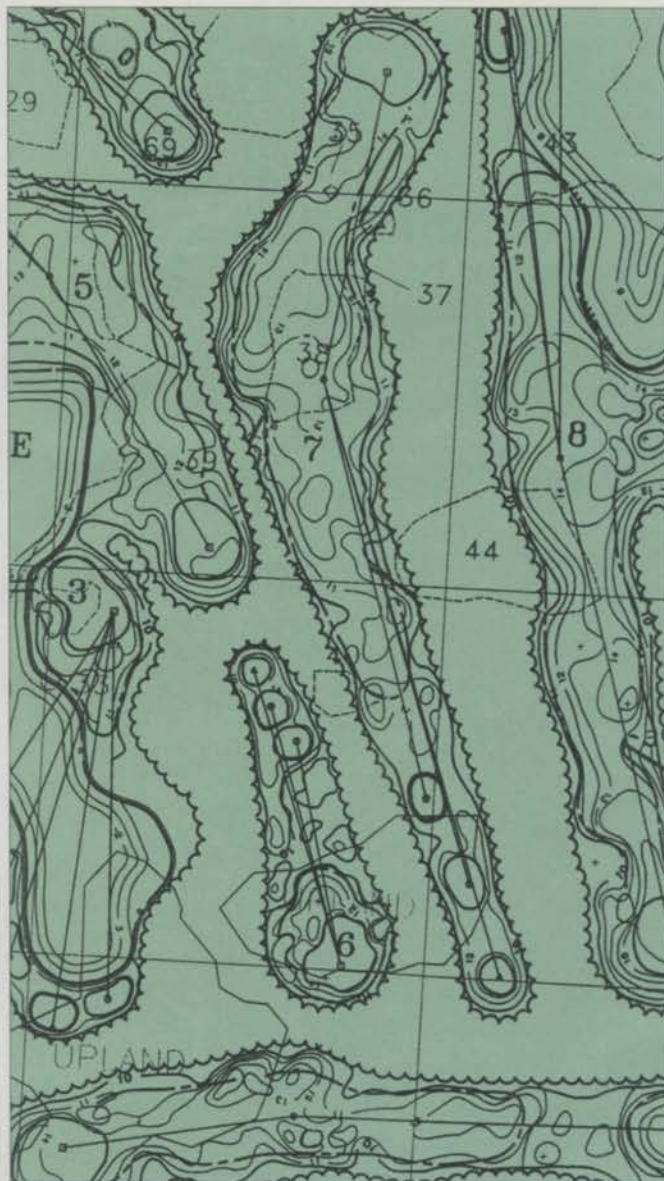
"Rarely have I seen a superintendent who can maintain his course to golfers' expectations while doing significant golf course re-construction." (The key word in that statement: "*significant*."

Tim Nugent, vice president of Dick Nugent Associates in Long Grove, Ill., believes the answers to problem holes must be solved in the best, cheapest, least disruptive manner.

"Usually, the superintendent is up to his eyeballs trying to maintain the course," Nugent says. "What it boils down to is this: Is it something you think you can deal with? And you have to remember that golf course architects deal with these kinds of problems every day."

Answer these—When addressing design concerns, Hurdzan believes the following questions must be answered first:

1) Is it worth the risk? What if problems arise that prevent



The seventh hole and surrounding environs at Naples National Golf Club, Naples, Fla. Drawing by Mark Hardy, Hurdzan Golf Course Design.

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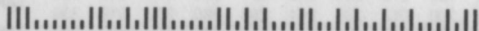
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Dr. Mike Hurdzan: maintenance more important than design

timely completion? Are you prepared if the newly-built system fails in some way? If you succeed, will you be warmly thanked or richly rewarded, or will they simply expect more of you next time?

2) Is there a safety or liability problem? If not, will one be created: a foreseeable danger to golfers, maintenance persons or adjacent landowners? ("Changes can cause a chain reaction of liability down the road," Nugent adds.)

3) How do you make it the most enjoyable for the most amount of people? Is there a group of golfers that hasn't been addressed?

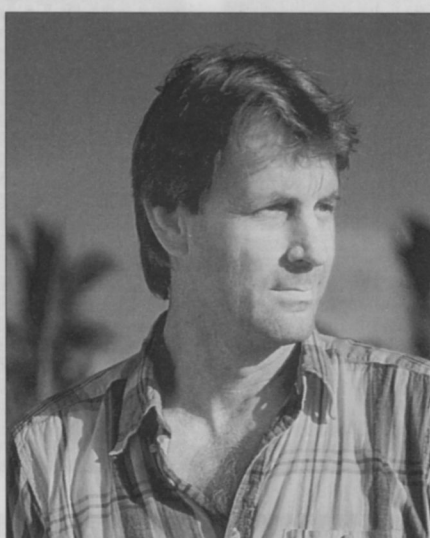
4) Can you develop a unified plan? Do you have proper installation training, adequate equipment, installation time, experienced workmen or foreman?

5) Do you harbor no false expectations? Will you be able to *guarantee* your final product to your greens chairman and members?

Hurdzan maintains that the design is often not the source of the problem(s). "If you've got money to spend, a good golf course begins with drainage. Irrigation is second, grass cultivars third," he observes. "Encouragement of wildlife is also becoming a big part of golf course aesthetics. And not one of those things involves changing tees, greens and bunkers."

Jarrell, who is re-establishing many of his greens ("there are some design changes involved"), is familiar with problem holes.

"You have to evaluate the scope of the problem and react accordingly," he notes. "When I rebuilt two greens, I hired two temporary guys for three to four weeks. We did two greens in May and opened



Supt. Mark Jarrell: spending \$3500 re-grassing each green

them in July, and two more greens in August and opened them in October."

Design factors—Greens are the most controversial part of the golf course, says Hurdzan. "Everyone wants an instant playing surface, but it's a three- to five-year process. The mat layer between grass and sand is the single most important thing, and it takes two to three years to develop. Growing in a green and long-term maintenance

are two different things."

Tees, Hurdzan contends, should be three sets of markers wide and drainage should be emphasized. "People appreciate new tees. They're easy to do, hard to screw up," he says.

Fairways could cause troubles with the bulk of the club's membership because irrigation design has dictated narrower fairways. "Modern golf courses should go back to the old Augusta style: maximum fairway, 50 to 70 yards wide, minimum rough."

Jarrell has an added advantage: internationally recognized golf course architect Joe Lee is a member of Palm Beach National. "He's constantly helping us make decisions," Jarrell states.

Yet, every golf course superintendent does not have that luxury. So when the decision to change a problem hole is imminent, every effort must be made to handle the project, as Nugent says, "in the best, cheapest, least disruptive" manner. In certain instances, it will mean doing it yourself; most of the time, however, it must involve the opinion of an expert in golf course design.

—Jerry Roche

Do it or bid it?

■ *Realistically assess the scope of the project by going through a potential risk evaluation. Honestly determine if the following sources of potential liabilities are high, medium or low. Check each block and add up your score for problems that might arise:*

SOURCE OF PROBLEM

1. Unskilled work crew mistakes
2. Improper installation equipment
3. Insufficient installation equipment
4. Inadequate installation training
5. Inexperienced in recognizing problems
6. Extended installation period required
7. Workman compensation claims
8. Improper irrigation functioning
9. No guarantee of workmanship
10. Perhaps no product warranty

Probability of trouble

High (3pts.)	Medium (2 pts.)	Low (1 pt.)

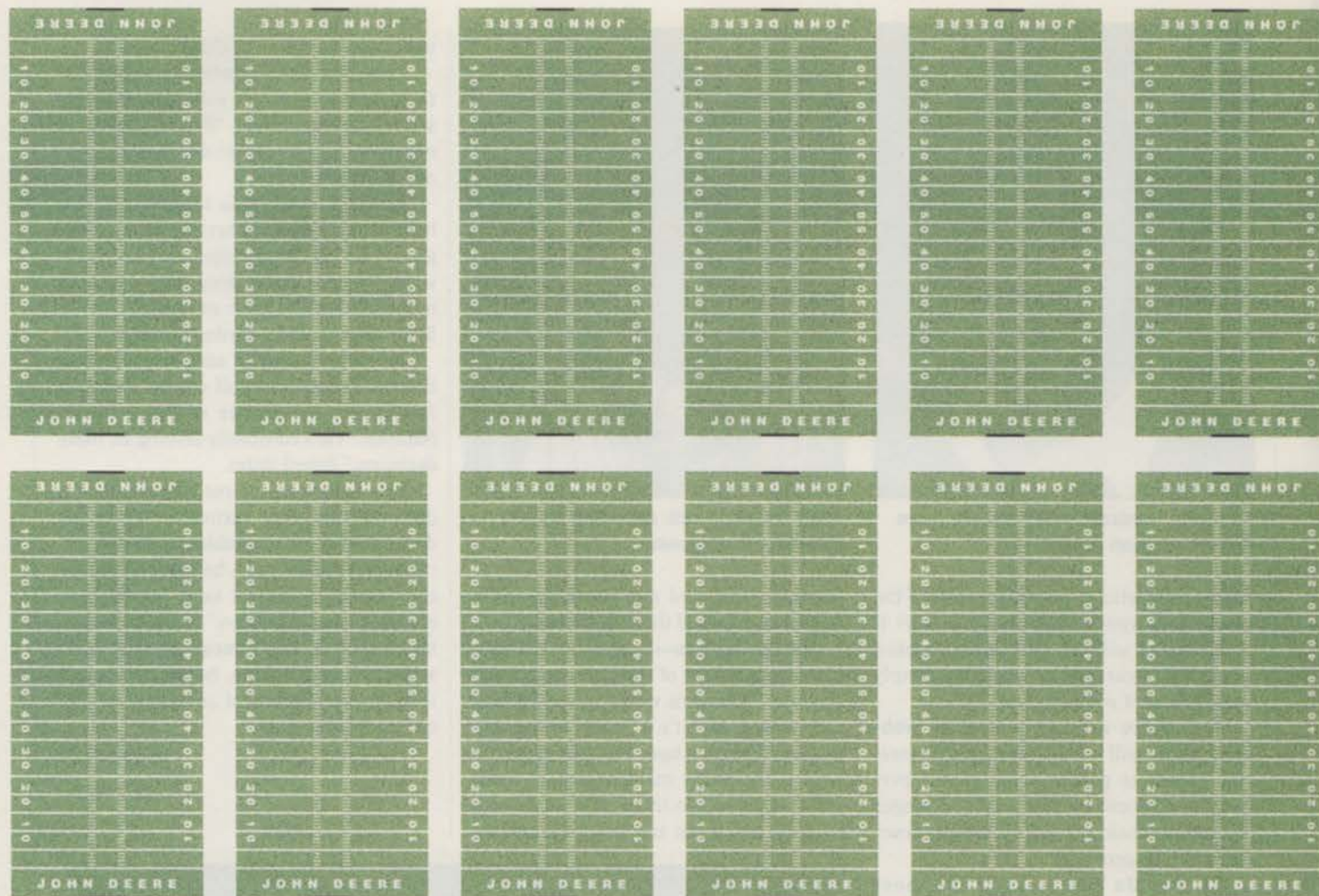
SCORING

15 or less: do it yourself

16 to 20: try to lower risks by examining your weaknesses and correcting them.

21 or more: contract it out

Source: Dr. Michael Hurdzan



This John Deere rushes for yards in an average day

If you've ever gotten that irrepresible urge to go for the world mowing record (maybe by trying to cut every natural turf field in pro football in one day) you've come to the right ad.

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over 147,000



What makes the F935 so good? Patented 2-pedal hydrostatic drive for control of speed and direction. And a big 11-gallon fuel tank.

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N



Granular control for crabgrass.
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which way
the wind will blow.

To control crabgrass and feed in one step, nothing works harder than Lebanon fertilizers with Team.* These time-saving granular formulations make application easier and more precise. Herbicide distribution more thorough. All without drifting or leaching through.

Team's pre-emergent control is proven more effective against crabgrass, goosegrass and other problem weeds all season long. Available in combination with premium-quality, homogeneous Greenskeeper 20-4-10 40% organic fertilizer. And top-rated, yet economical, Lebanon Pro SCU blends.

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BIOTURF NEWS

Organic programs give customers a choice

Green industry professionals with solid backgrounds in chemical turf care find value in organic alternatives.

■ Joel Simmons, Glenn Bonick and Phil Catron have different green industry backgrounds, but they share a common experience: at one time, all three used synthetic control products as the sole method of controlling turf problems.

Today, they're all offering organic-based lawn care programs as an alternative to chemical turf care.

Remember, we said *alternative*. None of these professionals is saying chemical control products should be completely eliminated, unless the individual customer demands it.

Simmons is a turf scientist and businessman who believes it's both essential and possible to combine chemical control products with well-planned and well-prescribed organic programs.

A Penn State grad, Simmons—president and owner of Earthworks Natural Lawn & Garden Care, Inc. of Martins Creek, Pa.—has plenty of experience in chemical-based turf care, having been the extension agent for Northampton County.

For the last 15 years, he and his partner, Jerry Brunetti, have owned and managed Agri-Dynamics, a company that formulates biological disease and pest control programs for agriculture.

Now, Simmons and Brunetti also run Earth Works, and both companies share a single focus: soil biology as the key to all turf problems.

"We've spent years working with agronomic issues," says Simmons, "in an attempt to further understand the complex dynamic of the soil and how it affects

the growing of various crops, in particular, turf."

Simmons says Earth Works is ready for "a major push" toward customizing programs for golf courses and lawn care service companies, thanks to years of research and product formulation.

The Earth Works approach, says Simmons, is different in that it stresses the importance of rock minerals, which restore the soil's mineral content; and humic acid, for root stimula-

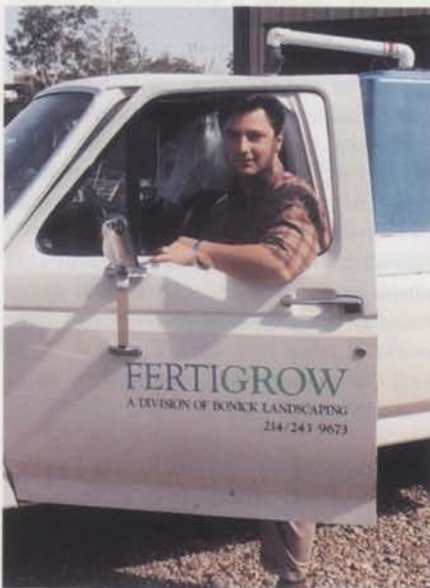
Beecher Smith, left and Phil Catron: focusing on residential natural lawn care.

tion and soil conditioning.

Simmons seeks a "happy medium" between chemical and biological turf management programs. "It's not us against them," insists Simmons, who stresses that the best lawn care programs feature a balance of the two approaches, provided "we focus first on agronomics."

According to Earth Works, synthetic fertilizers upset the carbon/nitrogen balance by oxidizing the soluble fractions of organic matter in the soil profile, leaving a dry, dead and compacted soil behind.

A biological soil management pro-



Bonick: Dallas pro offers customers 'low impact' option.

gram returns organic matter to the soil in the form of humus, by proper balance of soil cations, combined with sufficient secondary and micro-nutrients and biological remedies to antagonize insect fungal and nematode outbreaks.

Simmons believes we have to make a closer examination of the soil and its biological aspects before treatment, to minimize damage to microbial matter resulting from repeated pesticide applications.

The soil, says Simmons, is an "incredibly integrated system. If we can reduce stress, we will reduce disease, pest and weed problems."

Earth Works offers a variety of programs: a natural organic; natural organic and liquid fertility program; and a transitional IPM program.

Simmons is beginning work with golf course superintendents, and is pleased with early, "significant" results.

Natural/Organic Program Earth Works 5-4-5

1st Year

March—14 lbs./1000
June—8 lbs./1000
Sept.—8 lbs./1000
Nov.—10 lbs./1000

Gypsum

70 lbs./1000

\$.01/sq.ft./yr.
\$2.50/1000/app.
\$10/1000/yr.
+gypsum

2nd year

12 lbs./1000
6 lbs./1000
6 lbs./1000
8lbs./1000

Hi-Cal lime

50 lbs./1000

COSTS

\$.008/sq. ft./yr.
\$2/1000/app.
\$8/1000/yr.
+Hi-Cal lime

3rd year

10 lbs./1000
5 lbs./1000
5 lbs./1000
8 lbs./1000

Hi-Cal lime

50 lbs./1000

\$.007 sq. ft./yr.
\$1.75/sq.ft./app.
\$7/1000/yr.
+Hi-Cal lime

The above chart describes one of the natural/organic programs offered by Earth Works. The company alternates Hi-Cal lime and gypsum for each consecutive year at 25 lbs./1000. Use lower rates if liming has been practiced. If pH is above 7.0, use gypsum only. According to Earth Works, input costs for the entire program will go down as chemicals are reduced to spot treatments.

■ Glenn Bonick, a 30-year-old ex-champion skier from Dallas (yes, there *are* lakes there!) has been in business now for 10 years.

He went into the cutting business right out of high school, and eventually bought the property he was renting. He now employs 30 during peak season. The crews maintain lawns in high-end residential neighborhoods within a 10-mile radius, and commercial accounts farther out.

Fertigrow is Bonick Landscaping's new organic lawn care division, and, like most organic companies, it offers a choice: a "low impact" program for "cost-effective management" is composed of six visits each year, using advanced fertility and problem-solving techniques.

The "organic" program offers completely natural turf and ornamental care. The goal is a balance of organic materials, minerals, water, air and living organisms. Lawns, trees and shrubs are monitored and treated organically, as needed.

Fertigrow's "IPM" program combines organic and synthetic methods as needed and only where needed.

Like Simmons, Bonick believes the soil is "the root of the problem." And though organics are the focus of Fertigrow, Bonick will not hesitate to recommend a chemical approach if he thinks one is required.

Bonick admits, however, that he's not entirely comfortable with the going terminology. Words like organic and integrated pest management can result in pigeon-holing, much like some politicians hate to be

labelled as "liberals" or "conservatives". Bonick prefers "plant health care" to "pest management," and likes to say that he and others like him are simply "improving the environment," period.

Bonick is a certified landscape professional, one of the charter members of the Texas Association's certification program. Two of his crew are certified. His maintenance forman, Ron Traugher, has been with Bonick for three years.

Bonick is gradually bringing the maintenance crew up to speed on IPM, dreading as he does the prospect of a customer—or reporter—asking a question the worker can't answer.

Bonick has used BT (*Bacillus thuringiensis*) for sod webworm control, an especially troublesome pest in pecan trees.

Beyond the technical accomplishments of the Fertigrow program, Bonick is most proud of his efforts to design and install new landscaping for the Dallas Children's Advocacy Center, for abused or neglected children. Bonick and other local green industry firms donated material and three weeks of labor to rework 12,000 sq. ft. of turf and ornamentals, including a water management system.

■ In business for himself for the last five years, Phil Catron—president of NaturaLawn, Inc. of Frederick, Md.—sells organic-based lawn care franchises across 12 northeastern and southeastern states, from Maine to Michigan to South Carolina.

NaturaLawn franchises offer customers

two programs: one is a 100 percent organic-based soil amendment program; the other consists of an organically-based soil amendment combined with integrated pest management (IPM) treatments of biological, biorational or synthetic products. All organic products are formulated exclusively for NaturaLawn franchises.

"We are a very focused company, offering residential lawn care only," says Catron, who believes the success of companies like NaturaLawn is grounded in a philosophy of giving the public what it wants: a choice in lawn care.

NaturaLawn is regimented about training. Franchisees must attend as many as 18 scheduled training sessions each year.

Catron believes that he and vice president of operations, Beecher Smith, are being rewarded for their patience, now that their audience is growing. "Things that were pooh-poohed are now having a major impact on the industry," says Catron.

There are currently 22 NaturaLawn locations, and three corporate-owned units, and the company plans to move into Canada in the near future.

The business averages three inquiries for franchises per day. A franchise costs \$29,500 and can include a financing package.

Catron—a ChemLawn alumnus—and NaturaLawn were recently the subject of a story in *In Business* magazine, which noted the company's success due to "rapidly growing consumer interest in safer ways to care for lawns and control pests..."

—Terry McIver

Successful natural programs require time, money and patient customers



Bonifant, left, and Henneberg: natural programs attract a relatively small audience.

■ Successful natural lawn care programs require time, money and patient customers, according to two green industry professionals who offer a natural alternative to interested clients.

Daniel Henneberg is president, and Bern Bonifant, vice president of Natural Lawns lawn care, Maryfield, Va. The two recently offered some advice to attendees at the 1992 Green Industry Expo in Indianapolis.

Natural Lawns uses dry products, although there are liquid alternatives on the market. Natural fertilizer source materials include dehydrated poultry manure or other animal proteins; and vegetable sources such as soybean meal, wheat germ or vegetable oil.

Henneberg warns that some natural products exude a very strong odor—something the customer should know before the product is applied—and products like feather meal might cause an allergic reaction in more sensitive customers.

A look at cost—According to Bonifant, cost per unit of nitrogen can run from three to nine times the cost of a high-grade synthetic.

“As you move into larger size proper-

ties, such as a 15,000 sq ft home site or a 70,000 ft. office complex, you're going to run into significant difficulty with trying to do that with an all natural program because of the cost of the materials,” says Bonifant.

The company's total audience for natural programs is no more than 20 percent of its customer base.

The company's total audience for natural programs is no more than 20 percent of its customer base.

“I don't want to say it can't be done,” he says. “But it involves targeting to particular customers in particular areas.”

Natural Lawns services the Washington, D.C. metro area, one that might be considered full of potential customers for organic products, given that every other person is striving to be “politically correct.” Still, Bonifant says the company's total audience for natural programs is no more than 20 percent of its customer base.

How they perform—“The lawns on the natural program will be thick, with good color,” says Bonifant, “but they are also going to have a large number of weeds through the lawn.”

One way Bonifant and Henneberg suggest to curtail weeds is to raise the mow-

ing height to three inches for bluegrass, three-and-a-half inches for tall fescue.

Natural Lawns has used milky spore for grub control, but not lately due to problems with effectiveness.

In the area of disease control, Bonifant says natural fertilizers have substantially reduced diseases. “We get a lot less disease occurring in less severe forms than on comparable properties using comparable types of fertilization.”

Seeding is important. Natural Lawns advises customers seeking natural alternatives to replace weak stands of turf. They're big fans of “endophyte-enhanced” seed varieties, which Bonifant says have “substantially reduced levels of insect presence and damage.”

Where are they?—Bonifant says potential natural program areas include:

- sensitive areas: where lawns abut lakes, streams, surface waterways;
- wildlife habitats;
- high-sensitivity areas, such as hospitals, nursing homes and day care centers;
- colleges, which seem to foster anti-pesticide attitudes; and
- special use areas such as community swimming pools and playgrounds.

—Terry McIver

Biological Control Insecticides for Safe Use in Sod and for Landscape Ornamentals

Beneficial Insecticidal Nematodes

Targets	Trade Names	Manufacturers	Circle No.
Immature forms of: Sod webworms, white grubs, including Japanese beetles, strawberry crown borer, raspberry crown borer, mole crickets, banana moth,	Horticultural Scanmask	Biologic Chambersburg, PA (717) 349-2789	320
	Exhibit	Ciba-Geigy Greensboro, NC (919) 547-1160	321

Beneficial Insecticidal Bacteria

Targets	Trade Names	Manufacturers	Circle No.
Japanese beetles in sod	Doom	Fairfax Biological Clinton Corners, NY (914) 366-3705	322
Elm leaf beetle, cottonwood leaf beetle, elm calligrapha, imported willow leaf beetle	M-Trak	Mycogen San Diego, CA (800) 745-7476	323
Lepidoptera on bedding plants, ornamentals, shade trees, nursery trees, and in forests	Cutlass and Condor	Ecogen Langhorne, PA (215) 757-1590	324
Sod webworms, Lepidoptera on bedding plants, ornamentals, shade trees, nursery trees, and in forests	Steward	Sandoz Agro Des Plaines, IL (800) 445-4823	325
Sod webworms, Lepidoptera on bedding plants, ornamentals shade trees, nursery trees,	Dipel 2X	Abbott Laboratories North Chicago, IL (800) 323-9597	326
Mosquitoes and black flies	Vectobac 12 AS	"	
Fungus gnats	Gnaterol	"	

Source: Dr. John D. Briggs, Ohio State University

Organic terms defined

- For the uninitiated, here are the most commonly-used terms when talking about organic turf care:

Organic fertilizer: A material containing carbon and one or more elements other than hydrogen and oxygen essential for plant growth.

Natural organic fertilizer: Materials derived from either plant or animal products containing one or more elements (other than carbon, hydrogen and oxygen) essential for plant growth.

Natural inorganic fertilizer: A mineral nutrient source that exists in or is produced by nature and may be altered from its original state only by physical manipulation.

Natural fertilizer: A substance composed only of natural organic and/or natural inorganic fertilizer materials and natural fillers.

Natural base: A fertilizer containing a minimum of 50 percent by weight of natural fertilizer materials.

Organic base: A fertilizer containing a minimum of 50 percent by weight of organic fertilizer materials and 50 percent by weight of primary nutrients which are derived from organic fertilizer materials.

Note: Avoid safety comparisons between organic, natural and synthetic products. Such comparisons include but are not limited to: references to toxicity, drift, odor and exposure.

When referring to organic or natural fertilizers and/or pesticides, analysis should be given.

PRODUCTS

Mycogen/Lubrizol a done deal; ant toxin research with S.C. Johnson shows promise

■ Mycogen Corporation announced in December that it had completed transactions valued at \$135 million with the Lubrizol Corporation to form a partnership to acquire Lubrizol's Agrigenetics Company Division.

The biological pest control company also said it and its Parasitix subsidiary and S.C. Johnson & Son, Inc. have discovered naturally occurring protein toxins with pesticidal activity against ants.

Mycogen and Lubrizol signed a letter of intent in April, but the deal was delayed pending recent stockholder approval.

Agrigenetics, the sixth largest seed company in the United States, has been conducting advanced agricultural plant biotechnology research since 1981. Its researchers were among the first to demonstrate that plants could be genetically engineered to become naturally pest-resistant.

The company's principal seed products

are corn, cotton, soybeans, sorghum, sunflowers, alfalfa, rape and safflower.

Mycogen develops, manufactures and markets environmentally compatible biological pest control products for agricultural and specialty markets. Its wholly-owned subsidiary, Soilserve, provides customized crop protection services to growers of high value crops.

Mycogen has 33 US patents covering its CellCap encapsulation system and newly identified strains of *Bacillus thuringiensis* (B.t.), the active ingredient used in many biopesticides and pest-resistant plant development programs.

As a division of Lubrizol, Agrigenetics had revenues of \$88.6 million in 1991, while sustaining a net loss of \$1.6 million, attributable mainly to its large research and development expenditures.

Mycogen, which also spends heavily on research and development, lost \$3.3 mil-

lion in 1991, on revenues of \$23.6 million. Mycogen cash reserves are approximately \$67 million.

Agrigenetics president, John Studebaker, and his senior management team have joined Mycogen, and were to relocate to the company's San Diego headquarters.

The co-discovery of toxic ant proteins is the first publicly disclosed result of a research and development collaboration between S.C. Johnson Wax and Mycogen that began in 1990.

S.C. Johnson Wax, headquartered in Racine, Wisc., operates in 46 countries world-wide, and is the maker of RAID brand insecticides.

Parasitix is a wholly-owned subsidiary formed by Mycogen to apply its core technology to develop products for the animal and human health markets and to manage its collaboration with S.C. Johnson Wax.

Write to company for info on organic lawn care

■ Harmony Products of Chesapeake, Virg. now publishes "Growing Alternatives," a newsletter designed to provide information about new aspects of the turf care industry, with a focus on organic and natural products.

Harmony says future issues will offer

technical information, research news from universities, marketing suggestions for organic lawn care, and will cover current issues in the organic and natural turf care markets.

A recent issue of "Growing Alternatives" featured articles on control-

ling thatch organically, plus a cost comparison of organic and synthetic lawn care programs.

To receive the "Growing Alternatives," newsletter, call Harmony Products at (800) 343-6343.

Bio-control agent attacks feeding lepidoptera

■ Steward biological insecticide, new from Sandoz Agro, Inc., contains *Bacillus thuringiensis* spores and crystals lethal to any insect of the order Lepidoptera, which includes armyworms, bagworms, budworms, leafrollers, loopers and caterpillars.

According to Sandoz, Steward is not harmful to customers, their children or their pets; other mammals, birds, fish and other insects.

Applications can be made and the turf used on the same day. Fruits and vegetables that have been treated with Steward need

only be washed before eating.

When larvae ingest Steward, the high pH of the insect's gut causes the crystals to break down into small, toxic protein units. These toxins adhere to the stomach lining, disintegrating the cells. Fluid flow and ionic balances are broken down. The insect quickly stops feeding and starts to die, while simultaneously, bacterial spores pass through the gut wall and germinate in the insect's blood.

As they continue to multiply, a form of poisoning known as septicemia develops.

Sandoz Agro, Inc. says Steward will control target insects for three to four days or longer after application. Control may last up to 10 days depending on weather, cultural and growth factors.

The company says Steward is most effective against smaller worms, and says it is important to spray when most of the worms are still in the first or second

For a 1000-sq. ft. area of turf, use one tablespoon of product in 2.3 gallons of water.

Circle No. 309 on Reader Inquiry Card

PRODUCTS

Neem tree yields growth regulator

■ Azatin, a new botanically-based insecticide from AgriDyne Technologies, Inc. of Salt Lake City, is registered for indoor and outdoor use in greenhouse, nursery and ornamental markets. The product is an extraction from the neem tree, which grows in India.

AgriDyne says, Azatin has shown excellent insecticidal activity against major greenhouse and ornamental pests. It effectively controls sweetpotato whiteflies, greenhouse whiteflies, leafminers, fungus

gnats, sawflies, mealy bugs, and a wide spectrum of Lepidoptera, especially cutworms, armyworms, webworms, cankerworms, leafrollers and gypsy moths. It also suppresses thrips, aphids and leafhoppers.

The insecticidal activity of the neem tree is attributed to azadirachtin, a compound found in small amounts in neem leaf, fruit and bark, but concentrated mainly in the seed. The compound has demonstrated control over 131 species of insects, 60 of which are common in the

U.S., according to the company.

The insecticidal activity of Azatin stems largely from the insect growth regulator IGR activity of azadirachtin. Azatin controls insects in all larval stages, and has the unique ability to control insects in the pupal stage. Azatin does not control egg or adult stages of insects, but its activity against larval and pupal stages of insect pests keeps adult populations in check, says AgriDyne.

Circle No. 310 on Reader Inquiry Card

Fertilizer's naturally-occurring nitrogen source provides quick green-up

■ Earthgro, Inc. of Lebanon, Conn. has blended composted plant and animal sources with naturally-occurring minerals to create its Natural Organic & Mineral Lawn Food. This completely all-natural formula quickly provides a rich, lasting green, nourishes grass plants and encourages thick, lush top growth, according to Earthgro. The products contain no sewage sludge or synthetic elements.

Earthgro Lawn Food 8-2-4 contains a naturally-occurring mineral form of nitrogen that is water soluble, providing quick green-up. The balance of nitrogen from

natural organic sources is water-insoluble for sustained feeding throughout the season. Earthgro Lawn Food is compost-based, and contains the beneficial microorganisms and organic matter important to healthy soil development and strong root growth.

"Earthgro Lawn Food provides all of the environmental benefits of organic fertilizers with the addition of a natural, quick greening mineral that they lack," says Jim Wilkinson, Ph.D., Earthgro's manager of professional sales. "The Lawn Food's ability to cultivate dense and rapid

growth in an easy, cost-effective manner makes it absolutely ideal for use on residential lawns, golf fairways, athletic fields and commercial.

According to Earthgro, the product supports new growth in early spring, discourages browning in the summer and nourishes grass in the late fall. It also stimulates deep root growth through a slow-release, sustained feeding system while simultaneously crowding out unwanted weeds and crabgrass.

Circle No. 311 on Reader Inquiry Card

Wastewater by-products yield new, all-natural organic fertilizer

■ Terrene is a completely natural organic fertilizer recycled from organic by-products of wastewater treatment, from Enviro-Gro Technologies of Lancaster, Penn.

According to Enviro-Gro, the nitrogen in Terrene is 90 percent insoluble, so plant nutrients resist leaching into the groundwater. The fertilizing benefits of Terrene stay in the soil and are released to the feeding plants over a longer period of time. The

natural breakdown of Terrene provides a controlled release of nutrients, allowing a steady green color and more uniform growth using less overall fertilizer.

Terrene is pelletized to a uniform granule size for ease of application, and can be used on trees, shrubs and flowers.

Enviro-Gro says Terrene's salt-free characteristic is a plus, eliminating any potential for burn.

In northern climates, apply Terrene three to five times per year at the rate of 15 to 20 lbs./1000 sq. ft., respectively. In southern climates, apply three to five times per year at the rate of 20 to 25 lbs./1000 sq. ft.

New lawns will need greater amounts of nutrients in the beginning.

Circle No. 312 on Reader Inquiry Card

PRODUCTS

Slow-release fertilizer uses urea, feather meal

Ringer Corporation is introducing Turf 16-2-4, a new hybrid fertilizer for use on golf course fairways and commercial lawn care applications.

According to the company, the formulation combines faster green up with slower

controlled release of nitrogen.

Urea, ammonium sulfate and feather meal are the three nitrogen sources used in Turf 16-2-4. The initial nitrogen release comes from urea, which is coated with a high-sugar, high-carbohydrate material. The

remaining nitrogen is slowly released over the next six weeks through the degrading of feather meal and increased microbial activity with the ammonium sulfate. Ringer says the result is a long, steady turf feeding period.

Circle No. 313 on Reader Inquiry Card

Debut for co.'s first nematode-based larvicide

Ciba-Geigy in July released Exhibit, a nematode-based larvicide, for use in the green industry.

According to the company, the active ingredient in Exhibit is formulated using a naturally-occurring species of beneficial nematodes that coexists in the ecosystem with wildlife, beneficial

insects, domestic animals and humans.

The nematode's life cycle begins when it enters a target pest through a body opening and releases its deadly bacteria directly into the blood system of the host. The host pest dies within 48 hours, and nematodes develop rapidly into first-generation adults and reproduce.

Exhibit controls fungus gnats in greenhouses; root weevils on ornamentals; surface feeders on turf. It will not burn turf or ornamentals. Plants may be sold the same day they're treated, and there are no re-entry restrictions for the products.

Circle No. 314 on Reader Inquiry Card

Organic thatch control alternatives

■ Thatch is composed of living and dead stems (stolons and rhizomes) and roots. This tangled mesh harbors insects and disease-causing organisms slows movement of water, fertilizer and pesticides and promotes shallow rooting. Lush growth is the major cause of thatch accumulation, which occurs when the rate of decomposition cannot keep up with new thatch formation.

Excessive thatch accumulation reduces overall quality and can even destroy turf if not properly managed through removal or decomposition.

Thatch decomposition is performed by microorganisms, as well as micro- and macro-fauna such as earthworms, nematodes and insects. The fauna assist decomposition of thatch through physical disruption, thereby providing increased surface area for decomposing microorganisms. Fungi initiate thatch decay, followed by bacteria, and then nematodes feed on the bacteria and fungi.

Microbial activity is influenced by:

- organic matter;
- acidity;

- aeration and moisture;
- temperature.

With the exception of temperature, turf managers can alter the conditions favorable to microbial activity. Because some management practices can reduce microbial activity and slow thatch decomposition, they should be avoided.

Effect of organic matter

Microbial activity depends on the availability of organic matter and nutrients. Thatch is mostly carbon and difficult to "digest" by many microbes; however, by maintaining a supply of organic nitrogen, the activity of microbes is enhanced.

Organic nitrogen fertilizers and soil conditioners can increase available nitrogen and stimulate microbial activity.

Acid and thatch

Optimum decomposition occurs at pH of 6 to 6.8, and adjusting the pH to within this range may help promote microbial activity and accelerate decomposition. Acidic conditions have been shown to promote thatch accumulation.

Organic nitrogen fertilizers can increase available nitrogen and stimulate microbial activity.

Long-term use of selected fungicides and fertilizers, which may alter pH can inhibit thatch degrading microbes.

Aeration and moisture

Maintaining adequate oxygen levels through core aeration or vertical slicing favors microbial activity. Avoiding oxygen depletion also favors rooting and overall soil and plant health. Adequate, though not excessive, watering promotes thatch decay also. Decomposition of thatch is more rapid when organic debris is moist.

By eliminating practices that produce lush, excessive growth and by maintaining proper organic matter, oxygen, moisture and pH levels, an active microbial community will not only help reduce thatch buildup, but will also enhance overall plant vigor.

—Source: Brad Melvin, Ph. D., Bio Groundskeeper, Inc., writing in 'Growing Alternatives,' a newsletter of Harmony Products, Chesapeake, Virg.

BIOTURF NEWS

For the Latest Developments in Biological, Organic and Natural Turf Care!

With our October premier publication of *Bioturf News*, we at *LANDSCAPE MANAGEMENT* magazine continued our commitment to give you the best possible coverage of green industry happenings.

Bioturf News is our new, bi-monthly review of current research and development in "biological, organic and natural" turf care. In 1993, it will exist independently of *LANDSCAPE MANAGEMENT*.

Some alternative turf care products can't be ignored.

Independent University research has determined them to be viable forms of insect, weed and disease control.

Many of our readers have also formed opinions of biological and

organic products.

Some say biological and organic products are too expensive and take too long to show results.

Others believe customers should have a choice. And still others are probably wondering what all the excitement's about.

Our job, as an industry information source, is not to tell you what to think, but to simply relay the information to you—as soon as we can and in the best way possible—and let you take it from there.

There are two sides to every story. Your opinions count, and we want to know what you think of these products. Have you tried alternative turf care products? If so, what were the results?

To make *Bioturf News* the most useful green industry news source it can be, we will always welcome your questions and comments.



Jon Miducki
Publisher



Terry McIver
Editor



Bioturf News will be a bi-monthly newsletter reporting on biological, organic and natural products for the specialty turf market. But you have to subscribe in order to receive it. To receive your free, one-year subscription, please return the coupon below to:

Jon Miducki, publisher
LANDSCAPE MANAGEMENT
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UTILITY VEHICLES:

The battle for multi-purpose supremacy

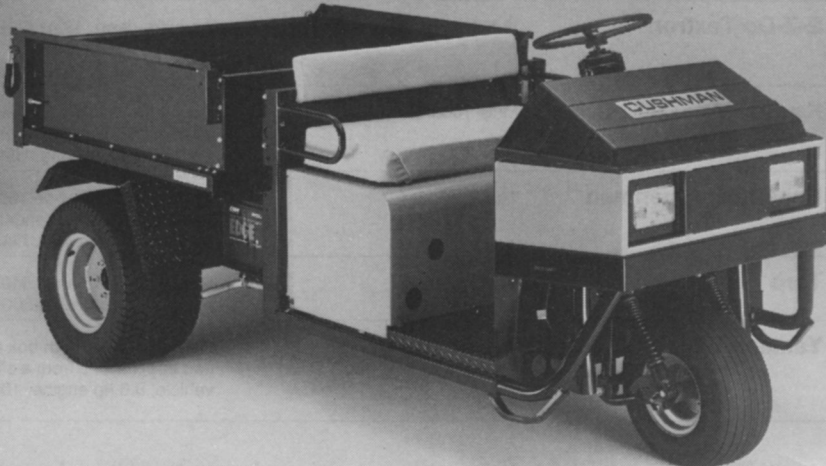
The winners in the utility-vehicle shoot-out are those with 'go-anywhere, do-anything' designs.

■ Utility vehicle manufacturers—never satisfied with last year's model—continue to make improvements in existing lines, or introduce new models that offer more options for the green industry professional.

Multi-purpose capability is more of a selling point, as landscape and golf course managers look for more economical ways to move people and equipment, and perform major landscape duties.

For example: Toro's Workman 3000 can be equipped with (*don't try to say it all in one breath*):

- a full bed or a 1/3 bed with stake sides;
- a Cushman Core harvester;
- a 200-gallon sprayer unit;
- infield conditioners;
- a 2/3 bed dump box;



The Turf-Truckster by Cushman

- a 60-inch rotary mower;
- a sand trap rake;
- debris blowers; and/or
- a spreader unit.

Rick Cairns of the Toro Company's Commercial Products Division calls it a trend toward polarization: one vehicle, multiple tasks.

Why not offer a truck that can serve as a crew transport and be heavy-duty and versatile enough to tackle the big jobs?

Other design considerations are weight capacity and bulk capacity.

"It's (the ability to do) more work with more attachments," says Cairns.

More utility vehicle customers are buying smaller vehicles to get around in, so why not offer a truck that will serve as a people transport, and at the same time, be heavy duty and versatile enough to tackle the big jobs?

Kawasaki's Mule vehicle line has a trailer hitch mount for towing; a windshield, cab doors and cab roof; sideboards; tool carriers and work light; a hydraulic tilt kit for the cargo bed; front bumper winch mount.

The Cushman Turf-Truckster, long an industry leader—a distinction Toro hopes to earn—has a wide range of equipment and attachments, including the high-capacity fifth wheel implements



Utility trucks by Jacobsen

UTILITY VEHICLES FOR THE GOLF AND LANDSCAPE MARKETS

<u>Company name</u>	<u>Vehicle name</u>	<u>Features</u>	<u>Circle No.</u>
Club Car	Carryall VI	4-cycle, 9-hp engine; self-adjusting rack and pinion steering; mechanical brake cable system to drum brakes on each rear wheel; 133" long body.	300
Columbia Par Car	Utilitruck	14-gauge steel sides; flat bed made of rustproof aluminum; extends to 82"x43"; 200-lb. payload capacity.	301
John Deere & Co.	AMT 600/626	4-wheel drive; 600-lb. capacity; 1000-lb. towing capacity; 4-cycle, single cylinder Kawasaki engine.	302
E-Z-Go Textron	Tuff 1	An extra-deep, 44"-wide 12-cubic ft. bed; 8.5 hp engine; 1000-lb. capacity; hydraulic shocks; continuously variable transmission.	303
Kawasaki	Mule 1000	45cc liquid-cooled, four-stroke engine; 1000-lb. capacity; variable belt-driven transmission; locking differential.	304
Ransomes/Cushman	Turf-Truckster	Three- and four-wheel models; live hydraulic systems standard; attachments for aeration, spraying, hauling and top-dressing.	305
Toro	Workman 3000	Multiple attachments; 540 rpm PTO; optional Cat. 1 hitch; 2600 lb. capacity.	306
Yamaha USA	Yamahauler	Design enables both box and flat-bed applications from a single, convertible vehicle; 8.6 hp engine; 1000-lb capacity.	307

for aerating, spraying, hauling, dumping or topdressing.

Dual outlets enable the Turf-Truckster to power remote hydraulic motors as well as give lifting and control of attached implements.

Jacobsen Textron's 2315 diesel and 2015 gas utility trucks haul 1,500 lbs. of passengers and cargo. A topdressing attachment covers a 31.5-inch swath. Two gas or PTO model sprayers are available, with one, 16-foot boom or two, 20-foot booms.

For clean aeration without core collection, a drum aerator is available. The aerator covers a 42-inch swath with a 6x6-inch pattern. The drums empty easily to help complete aeration with minimal disruption of play.

A universal mounting kit is also available to fit manufacturers' attachments on Jacobsen Textron trucks.

Worker comfort is also important, and the Columbia Utilitrucks are designed with a nod toward driver visibility and protection from the elements.

Cab options include front wipers, an interior dome light, an automotive rear-view mirror and easy-detach doors with sliding or stationary windows.

E-Z-Go's new utility vehicle is called the Tuff-1. Ron Skenes says it's the successor to the company's GXT-804 model. It has a deeper cargo bed, and dump capability. The Tuff -1 was released two months ago.

"People want dependability and versatility; we've been hearing that for a long

time," says Skenes, manager of marketing services for E-Z-Go Textron.

Skenes agrees that golf and landscape professionals want a utility vehicle that can hold its own in a variety of jobs, not just as a way to transport people.

"The more attachments (a utility vehicle can support), the more attractive it is to the landscape manager or superintendent," says Skenes.

Look for a wide variety of utility vehicles and golf cars at the January, 1993 Golf Course Superintendents Association of America show in Anaheim, Calif. If you don't find the utility vehicle you're looking for at *that* show, it probably hasn't been made yet.

—Terry McIver



Kawasaki's Mule 1000



The Carryall VI from Club Car



Toro's Workman 3000

Advantage: Woods

No matter how you look at medium-duty Batwing® rotary mowers, Woods new MD315 has the advantage. Feature for feature the MD315 is a leader...and the ideal choice for a wide variety of commercial mowing applications. See for yourself.

Construction: Advantage Woods

7-gauge center frame deck plate, 8-gauge wing frame deck plates, 1/4" steel side frames with adjustable full length skids and full length box frame sections across the entire machine...these are just some of the construction features that give this 40-80 hp tractor rated machine the heft to meet the rigorous demands of daily commercial use.

Driveline: Advantage Woods

A 35R three joint input drive and Woods exclusive slide-through wing drive design results in the most compact, maneuverable cutter in its class.



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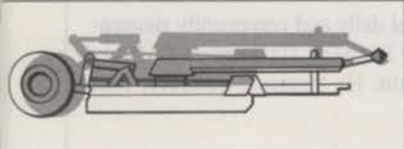
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Transport: Advantage Woods

The model MD315 wing sections hydraulically fold up and lock to a very compact 78" transport width. Road travel, gate clearance and storage are easier and safer.



Cutting: Advantage Woods

Cutting height is conveniently adjusted from 1" - 15" and kept level across the entire 15' cutting swath with a single hydraulic cylinder. The MD315's six blades provide clean, even mowing, cutting and shredding of grass, weeds and light brush.

If you're looking for a medium duty Batwing mower that offers versatility, reliability and value...look no further than the new Woods MD315. For more information contact Woods at 815/732-2141.

Circle No. 147 on Reader Inquiry Card

WOODS

OREGON, ILLINOIS 61061

Hold that trip to the local scrap heap; better fates await your old equipment

Personal contact with prospective buyers smooths the hard sell; advertising helps, too.

■ Unless your company headquarters is blessed with unlimited storage space, efficiently disposing of old, unwanted equipment can be better for your business operations.

For many landscape managers, unloading used equipment doesn't require a hard sell. Usually, just getting the word out does the trick. The chore is made smoother by simply maintaining personal and business contacts in the community.

"We've never had a problem moving used equipment out of here," reports Robert E. Bushouse of Green King Lawn Care/G&L Distributing in Kalamazoo, Mich. "I meet all the new guys starting out in the business in this area and then I set them up with equipment."

"Most of the established people are in the same position I am—they'd rather buy new equipment," Bushouse points out. But someone who has been in operation just one or two years welcomes the chance to buy bargain used equipment.

In addition to personal contacts, Bushouse keeps a lookout for new landscapers placing ads in the local newspaper. "If they advertise at all, I just plug them into our mailing list. If I have something really hot to sell, I'll send a post card out."

Although the distribution arm of his business helps provide additional visibility, Bushouse notes that people familiar with his sales of used equipment will call seeking specific items or referrals to other local businesses.

Pots 'n' plants—Bartering is a technique used at Las Colinas Landscape Services in Dallas, Texas. According to Mike Bratton, customers or vendors—such as a nursery—will make a trade in return for a piece of equipment.

"They'll come in and say, 'Hey, do you guys have any old mowers?' They'll give us pots or plants, and maybe some money will exchange hands," says Bratton. "Or, if I have a mower that's worth \$500, I'll get \$500 worth of trees."

Much of the equipment is used to its capacity. "Sometimes it's just flat worn out and we skeletonize some parts and scrap-metal the rest."

For example, the parts off two dead mowers will be used to keep five others running. The rest is tossed into a pile to be hauled, two or three times a year, to a scrap metal dealer. Las Colinas will get about 20 cents to 25 cents a pound for the several tons that they turn in annually, although the rates vary.

It helps, too, to have all the plastic and other stray materials separated from the targeted scrap, advises Sean A. Bennett, president of Bennett Enterprises in Lomita, Calif. "The cleaner the metal, the more you get for it."

To Bennett, making a scrap run is a form of recycling. The money earned by the scrap from his smaller full-service landscaping

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TREE SPADE: 1983 FORD F-700, 5 speed truck mounted with a 50" vermeer hydraulic tree spade to transplant material up to 5" caliper. Equipped with large locking utility boxes with shelving and a truck cab top rack to extra protection. Total new paint job on truck and spade. Extra spade and a spare cylinder. Both truck and spade are in excellent condition. \$18,000.

operation pays for the time and energy needed to turn it in. "You break even or make a little bit."

Bennett's selling method of choice for used equipment is a local auction house. "They take 20 percent of what they sell it for." He also likes to buy items at auction because for him it works out better than purchasing new from a dealer. "Our men don't regard new equipment on a high level," he explains.

Some pieces are used over and over again. "Snapper decks will last forever and we'll just put new engines on them," says Bennett. "We won't throw something out until it's seen its final day. It'll see the scrap pile before it sees re-sale."

It's a similar situation at The Country Club of Colorado in Colorado Springs. Superintendent Stan Metsker prefers to trade used items in for new products, but often it's more economical to just keep the good parts and junk the rest. "It doesn't take that many parts to make it worth more than what you'd get for it."

A list of available used equipment circulates in Metsker's area, but the specialized nature of some of the golf course equipment makes it difficult to move. Therefore, Metsker usually opts to trade it in, keep the parts or give it away, depending on the circumstances.

Some items are kept on hand for emergencies. "I try to keep back-up for all my main-line equipment," says Metsker. "I have an old 16-inch rotary that I keep," he notes. "It's not that good, but at least it works. When I get a new mower that one will be out of here."

Advertise—At the Monroe Sod Farm in Davidson, Mich., Scott Monroe will place classified advertisements in LANDSCAPE MANAGEMENT and work the phones. "Direct contact with different people" is his preferred method.

Placing classified ads in the local daily and community newspaper is the approach favored by Richard Gaffney of Gaffney Landscaping in South Euclid, Ohio. He stresses, however, that timing is everything.

continued on page 20

Only One Combination Is Big Enough To Offer A Season-Long Crabgrass Control Guarantee.*

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Circle No. 116 on Reader Inquiry Card

"I was selling a Bunton walk-behind for \$600 the first day," he recalls. "Now doing that in the fall—no—you wouldn't get that kind of response at all."

Sometimes just keeping a marketable item in a visible spot will attract buyers. Gaffney had an old dump truck that he kept stored in a parking lot in an industrial Cleveland neighborhood. "I wasn't really trying to sell it, but people kept stopping in to ask about it." And one of those streetside shoppers eventually made an good offer.

Placing ads in the local daily paper and posting notices on the company bulletin board will help move old equipment at Senske Supergreen in Yakima, Wash. Employees or local residents buy the items. "Once in a while we put them on consignment with our repair shop, but they really don't like to do that," reports turf agronomist Bo Hepler.

—James E. Guyette
— is a freelance writer based in South Euclid, Ohio.

WALKER DOES TOP LEVEL WORK ON THE ROOF



When Atlanta based landscape contractor, Scapes Landscape Management, wanted to improve efficiency in mowing the award winning Northpark Town Center Rooftop Park, they found Walker fit the job. Steven Coffey, owner of Scapes, told us:

We were surprised to find the Walker gave a better quality cutting job on the Zoysia turf grass than the walk behind reel mower we had been using. In fact, the building management asked us to continue using the "new" mower on their project after the first week we used Walker. Best of all, while improving quality, we cut our job time with the efficiency of the Walker rider. And Walker fits the job because it was compact enough to fit in the service elevator to ride to the third floor park.

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What to do with old equipment:

- 1) Sell it:
 - a) advertise in local papers or LM
 - b) test the water with 'beginners'
 - c) store it in a visible location
- 2) Trade it in
- 3) Use it for barter
- 4) Put it up for auction
- 5) Sell it as scrap metal
- 6) Use it as back-up equipment
- 7) Keep components as extras for working equipment

Maintenance prolongs lawn mower life

■ Treat lawn mower engines with the same respect you show your car's engine, says a machinery specialist at Penn State University.

Pay strict attention to owner's guide specifications, plus the viscosity and quality of oil used in the engine, says James Garthe, instructor in agricultural and biological engineering.


Keeping the air filter clean also extends your mower's life.

"If the air filter is dirty, minute particles of silicon can eventually get into the internal moving parts," Garthe says. "A dirty air filter also keeps air from getting to the engine and affects the air/fuel ratio that governs combustion. The engine has to work harder, wasting energy and fouling the spark plug with deposits."

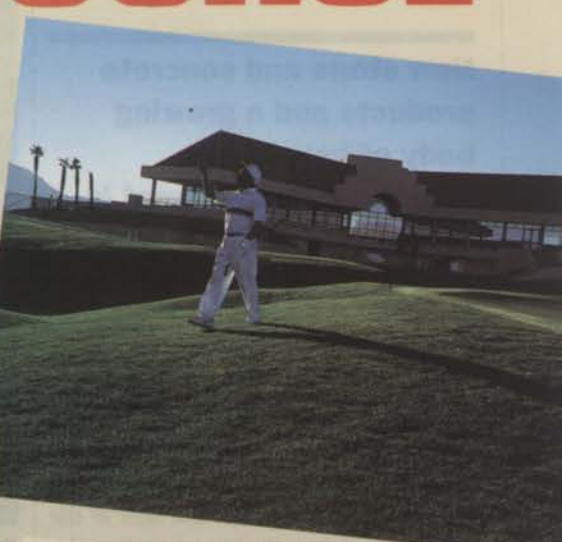
Other hints that Garthe and PSU offer:

- Check spark plugs regularly. Carefully scrape deposits from the plug with a pocket knife or wire brush.
- Change oil while it's still warm to drain suspended contaminants.
- If you keep your mowers in a damp location, consider coating them with a silicon spray to keep moisture out and discourage rust. Covering with a plastic tarp also keeps moisture—and rodents—out.

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Kentucky Bluegrass

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Landscapers are building more walls

New stone and concrete products and a growing body of how-to info broaden client interest in retaining walls.

■ A growing number of landscape companies are building retaining walls.

These include everything from simple treated-wood or railroad-tie planting beds to decorative concrete block walls.

A well-designed, well-constructed retaining wall serves a functional purpose but can, depending upon the skill of the builder and his choice of materials, enhance a landscape too. For instance, a residential client may choose a decorative, stone or block retaining wall instead of having a section of their property regraded to solve a particular site problem. Or to shore up an embankment.

"The design and installation of retaining walls has blossomed dramatically in the last three years," says Greg Ernst. He and his brother, Clint, operate Custom Retaining Walls & Landscaping, Rochester, Minn.

Often, what separates the work of landscape professionals like the Ernsts from general contractors in this kind of



Stone-faced block wall helps set off a stunning residential landscape.

work is the installation of appropriate plant material in and around the wall. This combination of attractive wood, block or stone wall and greenery can be particularly eye-catching.

Professionals like Ernst feel that one of the best times to suggest a retaining wall is at the initial landscape installation. "The design of a house will almost dictate that you need retaining walls," he says.

It's at these new-construction sites that a landscaper with good stone-laying experience can really show his stuff, says Freely Downing, Jr., Downing Landscape, Springfield, Ohio.

Not only does Downing Landscape design and build customized walls, but it also lays paving stone, installs walks, constructs tree wells, etc. The company uses a variety of building materials, including hand-picked flagstone and busted up sidewalks (rough side showing) to build some of its most distinctive retaining walls.

"Every once in a while we wonder how far away from the actual landscaping we want to get," says Downing. "But stone work is definitely becoming a bigger part of landscaping."

Retaining walls can be simple or elaborate, but increasingly they're also attractive.

That's because a growing number of stone and concrete block companies are coming out with newer, more attractive and easier-to-work-with products.

Typically, these suppliers will also provide suggestions and how-to's (some of it surprisingly detailed) on how to use their building materials.

"The learning curve's already been done by other people," says Ernst.

—Ron Hall

More about retaining walls:

● Building Stone Institute, P.O. Box 5047, White Plains, NY 10602-5047. 914-232-5725.

● Keystone Retaining Wall Systems, 7600 France Ave. S. Ste 110, Edina, Minn. 55435. 612-897-1040. 800-747-8971.

● Rockwood (and EZ Wall) Retaining Walls, Inc., 7200 N. Highway 63, Rochester, Minn. 55906. 800-535-2375.

● StoneWall Landscape Systems, Inc., 3934 N. Ridgelyfield Cr., Milwaukee, Wis. 53211. 414-962-4065.

● Tech-Stone, The Ideal Builders Supply & Fuel Co., 4720 Brookpark Road, Cleveland, Ohio 44134. 216-741-1600.

● Versa-Lok Retaining Wall Systems, P.O. Box 9116, North St. Paul, Minn. 55109. 612-770-3166.



Block suppliers like Versa-Lok provide solid how-to information.

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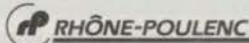
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Growing your business UP, not OUT

Mastery of the fundamentals (your primary service) produces some of the greatest accomplishments.

by Ed Wandtke

■ Many green industry companies were founded on the principle of delivering one prime service to customers. But when the company's rapid growth slowed down, the owner often looked at additional services his or her company could effectively provide to customers.

In 1992, I saw many companies re-evaluate their service diversification because their profitability was diminishing.

Why should your company look at "growing up, not out?" Are there real opportunities in diversification, or are there catastrophes waiting to befall the unsuspecting? Let's look at some of the issues you need to consider to determine what direction is right for your company in 1993.

So often, people expand their service base and have not considered some of the critical issues of expansion like credibility and marketing. Does your company really have any expertise or special skills that would allow it to enter this market if this service were your primary business? Who will you target this new service to, and what do you hope to accomplish? How does this affect your overall marketing plan for future growth?

Pool problems—Recently, I met an owner of a lawn care company who primarily services the very high end of the market. His lawn care program is six applications with aeration in the fall. He is priced extremely high, but his customers are thoroughly satisfied with his service.

As growth slowed down last year, he noticed many—approximately 40 percent—of his customers had swimming pools. As a result, he decided to offer pool maintenance services. His customers quickly responded and the business was rolling.

However, in mid-summer he realized that most of his customers' pools were

greener than their lawns. He needlessly lost valuable customers and the new growth quickly turned around. Today, he is back to strictly lawn care, even though his customer base hasn't completely recovered.

Iffy below 50!—I have a rule of thumb for businesses looking to expand. If the new service cannot bring in at least \$50,000 worth of new business, it is not a good area for expansion. I have found that until a company hits the \$50,000 mark, there are no efficiencies that make the new service an attractive add-on.

As lines of business expand, problems expand geometrically. For example, if you have a paperwork problem with one service offering, then with four service offerings you will have 16 times the problems.

After 15 years in the green industry, I've found that the true reason businesses expand into new services are typically the following:

1) Market problems: Companies that cannot attract new customers very effectively decide to service the same customer more often. Putting too many eggs in one basket can become very risky to a small business.

2) Service deficiency: Unfortunately, few owners realize that they are not quality service providers. Customer cancellation patterns and employee turnover should tell an owner how bad his service really is.

3) Competition: The company has underestimated the level of competition in

the market for the services they provide. As a result, they find it easier to offer what others don't. (How long do you think it will take before your competition realizes this too?)

4) Soft market: The area in which the business operates is economically soft. Perhaps opening a second location in a more viable economic area could be an alternative.

Offering a new service is not the wrong thing to do, as long as you have considered its marketing implications.

I believe that too many firms try to provide everything to everybody instead of targeting a particular market niche and working at it. Throughout history, mastery of the fundamentals (your primary service offering) has produced some of the greatest accomplishments.

In sports, teams with the winning traditions are always teams that master the fundamentals. In the green industry, ChemLawn of the late '70s and early '80s was the fundamental master of the lawn care industry. Today, Barefoot Grass seems to understand the importance of mastery of the fundamentals, as evidenced by its service offerings and successful growth.

If you are a full service company or considering offering a new service, make sure you have mastered the fundamentals of your service offerings. Constantly re-evaluating how you operate, what can be improved and what competition has arisen will be the keys to success.

As you begin the new year, you should make a commitment to "mastering the fundamentals."

—The author is a principle at Wandtke & Associates Management Consultants, 2586 Oakstone Dr., Columbus, OH 43231. For more information, phone (614) 891-3111.



Before adding services, make sure you've mastered the fundamentals.



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Big, old trees can be of promotional value

Using those trees you love and care for, to gain some public attention for your business.

■ Standout trees that are either big, old or odd can provide promotional value to local tree care operators. A company that encourages residents to track down these trees can harvest positive publicity.

"It's definitely something that appeals to the public," reports Lauren Lanphear, vice president of the Forest City Tree Protection Co. in South Euclid, Ohio.

As co-host of a gardening show aired over a local radio station, Lanphear invites listeners to write or call in with the location of a favorite old or big tree.

The tree promotion is not a contest in the true sense of the word, because prizes are not awarded, but it does serve as a clearinghouse for information on the area's unique specimens.

Each week during the 13-week summer radio season, Lanphear airs a brief piece on the location, size, approximate age and historic value of a selected tree. A 300-year-old white oak, for example, "was here when the U.S. Constitution was signed."

A handout is then prepared for distribution to tree-loving listeners who wish to visit these sights. "Each year I compile a list of the trees I have highlighted."

In addition to tips from listeners, Lanphear relies on information provided by Cleveland's Early Settlers' Association. He suggests that tree care operators in other communities can obtain similar help from historical societies, garden clubs and interested citizens.

"There can be some way of giving people encouragement," he advises, "like if you identify some kind of tree you get a booklet or service" related to tree care.

Touch trees, touch history—A successful promotion was launched by Larry Holkenborg Nursery, a tree care and landscaping firm in Sandusky, Ohio, to celebrate the nation's bicentennial. "We tried to find a 200-year-old tree in each township," he says.

Close to 20 plaques were affixed to these old-timers. "There were stories in the newspapers and all that," Holkenborg recalls. "I haven't had anyone say, 'I remember that

plaque; here's the job,' but it did bring positive publicity, and how do you measure that?"

Other tree care operators can benefit from similar promotions, Holkenborg says. "Anything to make people aware of trees" can bring positive results.

"I've seen this done in other communities and it's a good educational tool," reports Mark Ervin, special projects administrator for the Ohio Department of Natural Resources' Division of Forestry.

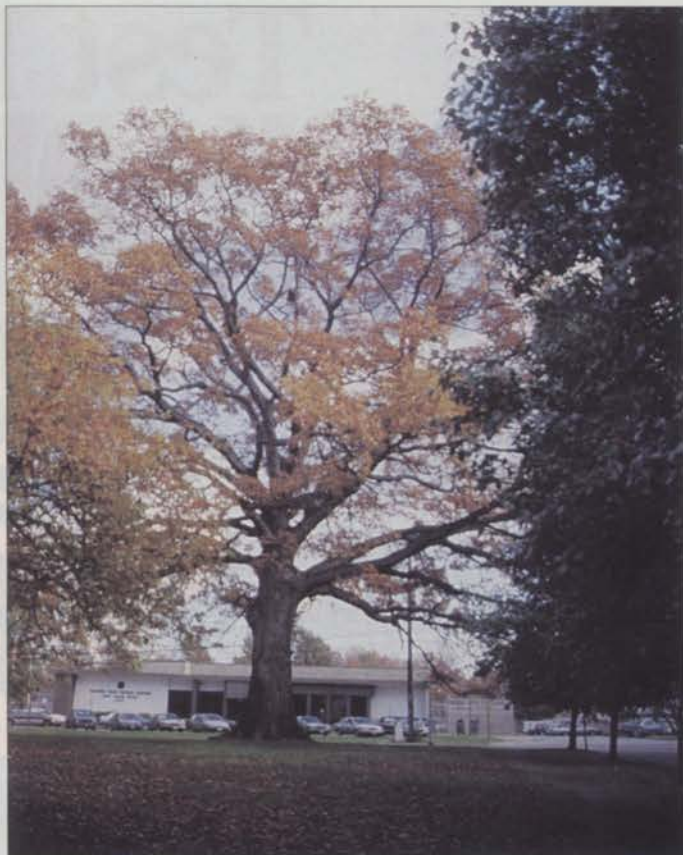
Promotions such as these "tend to increase the image and awareness of trees overall" among homeowners, says consultant Steve J. Day of Landscapes Plus in Littleton, Colo. Consumers then realize that trees "are just like people and cars—they need maintenance all their lives."

What else to look for—In Day's neck of the woods, near Denver, there are limited varieties of trees in the mountains, so he suggests promoting a search for "the most unusual specimen of a non-native tree."

And for those tree care operators reluctant to actually run a promotion, it can certainly do no harm to be on the lookout for a unique tree while out on the job.

"They can take a picture of it and include it in a newsletter as a special interest item," Day points out. "What arborists can do is tie in the history of the tree" with current buildings and events within the community.

"You can teach history through trees," explains Phillip Rodbell, urban forester at the American Forestry Association. The Washington, D.C.-based non-profit organization actively seeks information on trees that are large, old, famous or historic. "We get a



Promotions tend to increase the image and awareness of trees.

lot of participation from tree care companies at the local level," says Deborah Gangloff, vice president of program services. Help is needed to search out qualified trees, as is donated care for important trees in need of aid to survive.

The big picture—"Davey Tree is one of our biggest supporters in informing people about the value of big trees," Rodbell says. Davey sponsors the AFA's National Register of Big Trees, which names a "champion" biggest tree of each species. About 800 "living landmarks" have been selected, with Florida being No. 1 in big trees with 113. (Some 200 tree species lack a champion specimen.)

In addition to soliciting help from tree care operators in locating and caring for champions, the AFA also seeks out aid for other ongoing projects that can provide considerable visibility on a local level. "We are working with many tree care companies to encourage them to contribute time and equipment for tree planting," says Rodbell.

—James E. Guyette is a freelance writer based in South Euclid, Ohio.

What do you get when more than 4,400 turf managers switch to SCOTTS® Poly-S™ Technology?

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Seville, Hubbard 87, Shenandoah atop most recent NTEP test results

■ Seville St. Augustinegrass and Hubbard 87 and Shenandoah turf-type tall fescues have outranked all other commercially-available cultivars in the most recent tests released by the National Turfgrass Evaluation Program at Beltsville, Md.

Seville had an overall quality rating of 6.3 (of possible 9.0) of the 10 commercially-available cultivars tested, according to 1991 data. This particular test was established in 1989.

Hubbard 87 and Shenandoah had mean quality ratings of 6.2 at 42 locations across the U.S. The results were for the final year of a tall fescue test established in 1987.

Though Seville was tops in the St. Augustinegrass ratings, Mercedes and Jade had 1991 scores of 6.0 and 5.9, respectively, within the 0.4 tolerance established by the LSD (least significant difference) range.

Also rating high in the turf-type tall fescue test was Safari with a 6.1 mean score, within the LSD range of 0.1.

Twilight was tops in genetic color ratings with a 7.4 rating while Twilight had the best leaf texture rating, 6.6.

KY-31 was on top of the seedling vigor ratings with 6.3, followed by Jaguar, Trident, Adventure, Finelawn I, Apache and Titan, all within the 0.7 LSD tolerance.

Trident ranked highest in winter color (6.5), followed by Twilight, Rebel, Safari and Pacer. Hubbard 87, Bonanza, Titan, Thoroughbred, Twilight and Guardian all ranked at the top of the spring density ratings.

Here are 1991 ratings for all St. Augustine test sites and turf-type tall fescue sites.

How to use these charts

■ First, choose the test site closest to where you are planning to seed. Compare the scores of the varieties and select the ones best suited to your area.

Ratings range from 1.0 to 9.0, with 9.0 being a perfect turf. Keep in mind that no comparative difference is evident between turf scores closer than the LSD (least statistical difference) value. In other words, if one variety scores 6.5 for your area and another scores 6.9 and the LSD is 0.5, both would be equally suited to your area.

Please note that the following capitalized letters next to test sites indicate maintenance practices:

A = high maintenance

B = low maintenance

C = low mowing

D = high mowing

1991 PROGRESS REPORT/1989 ST. AUGUSTINE GRASS TEST

QUALITY RATINGS/COMMERCIALLY AVAILABLE CULTIVARS

	Camarillo, Calif.	Gainesville, Fla.	Apopka, Fla.	Belle Glade, Fla.	Miss. State, Miss.	Coastal, S.C.	Dallas, Texas	Cleveland, Texas	MEAN
SEVILLE	5.5	7.3	6.7	8.4	6.7	5.0	3.9	7.0	6.3
MERCEDES	5.2	7.5	6.0	8.3	6.7	4.7	3.7	6.2	6.0
JADE	6.2	7.3	6.0	7.9	6.7	4.7	2.1	6.7	5.9
DELMAR	5.7	7.4	7.0	7.4	5.4	4.7	2.7	5.8	5.8
BITTERBLUE	5.7	6.9	7.3	8.1	5.2	4.3	3.1	5.2	5.7
FLORALAWN	4.9	7.8	6.7	6.8	5.5	4.7	3.4	5.2	5.6
FLORATAM	4.8	7.5	6.0	6.4	5.8	5.0	3.6	5.2	5.5
SUNCLIPSE	6.9	3.0	6.3	7.3	6.2	5.7	2.0	6.8	5.5
RALEIGH	4.2	7.4	4.3	6.8	6.6	4.3	4.0	5.8	5.4
FX-10	5.9	7.1	5.0	7.7	4.3	4.0	2.4	6.2	5.3
LSD	0.9	1.7	1.8	0.9	0.9	1.1	1.6	0.5	0.4

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HUBBARD '87	5.2	6.5	6.9	6.2	6.8	4.7	7.0	7.1	6.4	7.5	5.9	7.5	4.7	7.5	7.6	6.3	6.3	5.5	6.4	6.6	6.1
SHENANDOAH	6.0	6.6	6.8	6.2	6.8	4.1	6.9	7.4	6.4	7.7	6.4	7.1	4.9	7.4	7.6	6.4	5.4	5.4	6.2	6.3	5.9
SAFARI	4.2	6.8	6.6	6.1	6.7	4.4	6.8	6.6	5.9	7.3	5.3	6.7	4.5	7.4	7.3	6.1	6.2	5.3	6.4	6.2	6.2
GUARDIAN	6.2	6.6	6.8	6.1	6.7	3.1	7.0	6.7	5.7	7.3	5.6	6.9	4.8	7.4	7.1	6.3	5.7	5.2	6.1	6.5	6.1
AUSTIN	4.8	6.6	6.4	6.2	6.7	5.7	7.0	6.9	6.4	7.7	—	7.0	—	7.1	7.1	6.0	5.4	5.6	6.0	6.0	5.5
COCHISE	5.7	6.4	6.2	6.0	6.6	5.0	7.1	6.5	5.9	7.5	5.9	6.8	4.6	7.4	7.0	5.8	6.3	5.5	6.4	5.8	6.3
AZTEC	5.2	6.5	6.8	6.2	6.7	3.4	6.7	6.1	6.0	7.3	6.0	6.6	4.4	7.6	7.2	6.3	5.6	4.9	6.3	5.6	6.4
MONARCH	5.6	6.2	6.8	6.2	6.7	3.9	6.8	6.3	6.2	7.1	5.9	6.9	4.6	7.1	7.6	5.9	5.7	5.0	6.1	5.8	6.6
AMIGO	5.6	6.5	6.6	6.1	6.7	4.1	6.7	6.6	6.2	7.5	5.0	6.8	4.7	7.3	7.6	6.1	6.0	5.5	5.9	5.9	3.7
CROSSFIRE	6.4	6.2	6.7	6.2	6.7	4.4	7.3	6.6	6.1	7.2	5.8	6.8	4.5	7.6	7.5	6.2	6.1	4.7	6.3	5.4	6.4
AVANTI	4.6	6.5	6.7	6.3	6.7	4.0	6.9	6.5	6.2	7.0	5.7	6.6	4.5	7.9	7.0	6.1	5.7	5.0	6.2	6.4	6.2
VEGAS	6.2	6.2	6.3	6.1	6.7	4.0	6.5	7.2	5.7	7.0	6.1	6.5	4.7	7.5	7.5	5.8	5.1	5.6	6.4	5.7	6.5
TRIBUTE	5.4	6.6	6.2	6.1	6.8	4.4	7.1	7.2	6.0	7.0	5.8	6.7	5.0	7.1	7.3	6.2	5.9	5.6	5.8	6.0	5.7
PHOENIX	4.9	6.4	6.5	6.0	6.7	5.3	6.9	6.8	6.2	7.6	5.8	6.9	4.5	7.0	7.2	6.4	5.9	5.6	6.1	6.0	5.1
THOROUGHbred	5.4	6.6	6.4	6.0	6.8	6.1	6.7	6.5	6.3	7.2	5.0	6.9	4.6	6.9	7.1	5.9	6.1	5.0	5.7	6.3	5.1
ELDORADO	5.0	6.4	6.4	6.1	6.7	5.3	6.6	6.6	6.2	7.1	5.5	6.6	4.6	7.4	7.0	6.0	5.9	5.4	6.2	5.8	6.2
SHORTSTOP	5.4	6.2	6.5	6.2	6.6	3.2	6.3	6.5	5.8	6.9	5.6	6.6	4.8	7.6	7.3	5.8	6.3	5.4	5.9	5.9	5.7
OLYMPIC II	6.0	6.4	6.6	6.1	6.7	4.1	6.9	6.2	5.4	6.9	5.5	6.8	4.5	7.0	7.4	6.1	6.1	5.0	5.8	5.2	5.3
REBEL II	5.4	6.5	6.4	6.1	6.8	5.9	6.9	6.4	6.0	7.2	5.4	6.9	4.6	6.8	7.1	6.4	6.1	5.4	5.7	5.5	5.1
BONANZA	5.2	6.2	6.5	6.0	6.7	5.6	6.6	6.4	6.0	7.5	5.4	6.9	4.8	6.8	7.1	6.1	6.1	5.1	6.1	5.8	5.4
WRANGLER	5.4	6.1	6.7	6.0	6.7	5.4	6.3	6.2	6.2	7.3	5.9	7.0	4.7	6.9	6.8	6.2	6.1	5.3	5.8	5.8	5.1
WINCHESTER	4.8	6.5	6.3	5.9	6.7	4.4	6.8	6.6	6.1	7.0	5.7	6.6	4.6	7.0	7.2	6.0	5.9	5.4	6.0	5.6	5.1
MAVERICK II	5.1	6.3	6.5	6.1	6.7	4.0	6.8	6.3	5.6	7.1	5.7	6.7	4.1	7.3	7.2	5.7	6.0	4.8	5.7	5.9	5.5
CHIEFTAIN	4.7	6.4	6.3	6.1	6.7	4.0	6.5	6.3	6.1	7.2	5.4	6.9	4.5	7.1	6.9	6.5	5.9	5.3	6.0	5.6	5.2
MESA	5.3	6.5	6.2	6.0	6.7	5.9	7.0	7.1	6.0	7.5	5.4	6.6	4.8	6.9	7.2	6.2	6.0	5.4	5.8	5.5	5.0
ANTHEM	5.1	6.4	6.4	6.1	6.7	3.6	6.9	6.8	6.7	7.4	5.3	6.6	4.5	7.2	6.9	5.6	5.9	5.5	6.5	5.0	5.8
TRAILBLAZER	4.3	6.2	6.6	6.1	6.8	4.2	5.7	6.2	5.8	7.1	5.3	6.7	4.5	7.4	7.1	5.7	5.9	5.4	6.2	5.3	5.7
ARRIBA	5.2	5.9	6.8	6.1	6.7	3.2	6.6	6.6	5.9	7.0	5.7	6.7	4.6	7.0	6.6	6.2	5.5	5.0	5.8	6.1	5.3
SILVERADO	5.0	6.3	6.8	6.1	6.7	3.7	6.6	6.2	6.0	6.8	5.4	6.4	4.5	7.3	7.1	5.8	5.8	5.1	6.0	5.5	6.3
OLYMPIC	5.3	6.5	6.0	6.0	6.7	5.2	6.4	6.1	5.8	7.3	5.3	6.9	4.3	6.9	7.1	6.0	6.2	5.2	5.5	5.9	4.9
JAGUAR II	5.0	6.2	6.3	6.0	6.8	4.2	6.9	6.6	6.4	7.1	5.2	6.8	4.4	6.8	7.0	6.4	6.6	5.2	5.7	5.4	4.7
TRADITION	5.8	6.3	6.1	6.0	6.8	4.4	6.9	6.7	6.2	7.1	5.1	6.7	4.7	6.9	7.2	6.0	5.9	4.8	5.7	5.2	4.8
TWILIGHT	5.9	6.8	6.3	5.9	6.7	3.2	6.0	6.4	6.4	6.3	—	6.4	4.5	8.2	6.9	5.7	5.8	4.9	7.2	5.3	5.4
SUNDANCE	4.9	6.4	6.0	6.1	6.7	4.4	6.5	6.7	5.8	7.2	5.6	6.6	4.6	7.1	7.1	5.8	6.1	4.9	6.0	5.8	5.3
APACHE	5.7	6.3	6.2	5.9	6.7	4.2	6.5	6.8	5.9	7.3	5.7	6.8	4.6	7.2	7.1	5.9	5.8	4.7	5.8	6.1	4.8
TITAN	5.0	6.3	5.8	6.0	6.7	5.4	7.0	6.5	6.4	7.1	5.6	6.7	4.6	6.7	7.0	6.3	6.0	5.6	5.5	5.3	4.6
BARNONE	5.0	6.3	6.4	6.0	6.7	5.7	7.0	6.6	6.2	7.0	—	6.6	4.7	6.9	7.1	5.8	5.5	4.9	5.9	5.9	4.6
TAURUS	5.3	6.5	6.4	6.1	6.7	3.8	6.4	6.4	5.9	7.0	5.6	6.6	4.6	6.8	6.9	6.3	5.9	4.9	5.7	5.8	5.2
BRAHMA	5.5	6.0	6.5	6.1	6.6	3.9	6.2	6.3	5.9	6.7	5.5	6.9	4.6	7.0	7.2	6.0	6.3	5.0	5.9	6.3	5.3
CIMARRON	5.1	6.4	6.4	5.9	6.8	4.3	6.3	6.6	6.2	7.2	5.4	6.6	4.3	6.9	7.4	6.1	6.2	4.8	5.8	5.2	4.7
ARID	5.8	6.2	6.1	6.1	6.7	4.8	6.8	6.3	6.2	6.8	5.7	6.6	4.6	6.6	6.5	5.9	6.0	5.1	5.5	5.5	4.5
FINELAWN 5GL	5.0	5.8	6.1	6.0	6.7	6.0	6.6	6.5	6.0	6.7	4.8	6.9	4.8	6.6	6.7	5.8	5.6	5.1	5.4	5.5	4.1
JAGUAR	4.5	6.2	6.1	6.1	6.7	4.8	7.0	6.4	5.8	7.5	5.2	6.9	4.6	6.8	6.4	6.0	5.6	5.7	5.4	5.5	4.5
REBEL	5.3	6.0	6.2	6.0	6.7	5.9	6.3	6.2	6.2	6.8	4.9	6.6	4.6	6.6	6.6	6.0	6.0	5.2	5.5	5.3	4.4
CAREFREE	4.5	6.5	6.1	6.0	6.8	4.8	5.6	6.3	6.3	7.0	5.7	6.7	4.6	7.1	7.0	5.8	6.1	5.1	5.4	5.9	4.6
MURIETTA	4.3	6.0	6.9	6.2	6.7	4.1	6.2	6.2	5.4	6.9	5.3	6.7	4.3	7.1	6.9	5.8	5.8	5.0	5.9	6.0	5.0
TRIDENT	4.7	6.4	6.0	5.9	6.7	4.9	6.3	6.6	6.1	7.1	5.6	6.6	4.2	6.7	6.8	6.0	5.8	5.1	5.6	5.4	4.2
ADVENTURE	4.7	6.2	6.3	6.0	6.5	5.3	6.5	6.0	6.0	7.2	5.8	6.8	4.5	6.8	6.5	5.9	5.5	4.6	5.4	5.6	3.8
EMPEROR	4.6	6.2	6.4	6.2	6.7	2.6	6.4	5.9	5.1	6.3	6.1	6.4	4.5	7.2	6.9	5.9	6.1	4.7	6.0	5.2	5.3
FALCON	4.5	6.0	5.7	5.9	6.6	4.3	6.7	6.3	5.4	6.8	5.4	6.2	4.6	6.5	6.2	6.0	6.1	4.6	5.4	5.2	3.7
PACER	5.2	5.7	5.5	5.8	6.6	5.2	6.6	6.2	6.0	6.6	5.4	6.3	4.5	6.5	6.2	5.8	5.6	4.8	5.5	5.0	3.8
FINELAWN I	5.3	6.0	5.8	5.6	6.5	5.7	6.4	6.1	6.2	6.7	4.8	6.5	4.4	6.2	6.3	5.8	5.9	5.0	5.1	5.2	3.4
WILLAMETTE	5.2	6.2	5.7	5.8	6.6	4.8	5.9	6.1	5.7	6.5	5.3	6.7	4.4	6.2	6.7	5.9	6.1	5.2	5.4	4.1	3.4
RICHMOND	4.7	6.1	5.6	5.8	6.6	4.4	6.1	5.8	6.0	6.7	5.2	6.2	4.6	6.3	6.4	5.6	5.8	4.9	5.2	5.2	3.6
AQUARA	5.1	6.0	5.3	5.9	6.6	4.7	6.2	6.1	5.7	6.3	5.0	6.4	4.4	6.3	6.5	5.4	5.7	4.7	5.2	4.9	3.4
FATIMA	5.0	6.1	5.3	5.8	6.4	4.9	6.5	6.1	6.0	6.5	5.3	6.0	4.4	6.1	6.2	5.8	5.8	5.2	5.0	5.2	3.3
TIP	5.1	6.1	5.7	5.9	6.6	4.3	5.8	5.9	5.7	6.5	5.0	6.0	4.2	6.3	5.8	5.7	5.8	5.1	4.9	4.3	3.0
K4-31	4.4	5.6	4.7	5.0	5.6	6.0	5.2	5.6	5.3	6.0	5.1	5.7	4.2	5.3	5.3	5.1	5.3	4.4	4.4	4.3	2.3
LSD	0.6	0.6	0.3	0.2	0.3	1.7	0.6	0.7	0.7	0.5	1.1	0.3	0.5	0							

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1989 TALL-FESCUE TEST QUALITY RATINGS COMMERCIALY- AVAILABLE CULTIVARS	Adelphia, N.J.	Martinsville, N.J.	Ithaca, N.Y.-C	Ithaca, N.Y.-D	Marysville, Ohio	Stillwater, Okla.	Hubbard, Ore.	Corvallis, Ore.	Kingston, R.I.	Dallas, Tex.-D	Dallas, Tex.-C	Beltsville Md.-A	Beltsville, Md.-B	Blacksburg, Va.	Blackstone Va.	Richmond, Va.	Va. Beach Va.	Norton, Va.	Ritzville, Wash.	Yakima, Wash.	MEAN
HUBBARD '87	7.2	5.7	5.7	6.1	7.1	5.6	6.8	5.6	6.2	5.1	5.1	7.7	6.9	6.4	6.0	5.9	6.5	4.8	6.8	3.7	6.2
SHENANDOAH	6.9	5.6	5.1	5.4	7.3	5.9	6.6	5.3	5.9	4.7	5.0	7.7	7.1	6.4	5.6	5.9	6.6	5.3	5.9	4.7	6.2
SAFARI	6.8	5.8	5.3	5.5	7.1	5.6	6.5	5.1	6.3	4.7	5.2	7.5	6.8	5.9	5.6	5.7	6.0	4.4	6.9	6.7	6.1
GUARDIAN	7.0	5.7	4.9	5.4	6.9	5.5	6.6	5.3	5.6	4.7	5.2	7.7	6.9	6.2	5.5	5.7	6.4	4.7	6.9	4.7	6.0
AUSTIN	6.0	5.1	5.2	5.6	6.8	5.5	5.8	5.1	6.2	4.9	4.8	7.4	6.7	6.2	5.1	5.6	5.8	5.0	—	5.3	6.0
COCHISE	6.8	5.5	5.1	5.6	6.7	5.3	6.4	5.1	6.0	4.8	4.6	7.6	7.1	6.0	5.2	5.8	6.3	4.4	5.1	5.7	6.0
AZTEC	6.6	5.9	4.7	5.2	6.8	5.3	6.4	4.9	5.9	5.2	4.7	7.7	7.0	6.0	5.4	5.7	6.2	4.5	6.0	7.3	6.0
MONARCH	6.5	5.6	4.8	5.0	6.8	5.4	6.5	5.1	6.3	4.6	4.7	7.5	6.9	6.1	5.2	5.9	6.2	4.5	4.8	7.7	6.0
AMIGO	6.1	5.4	5.3	5.6	7.0	5.1	6.9	5.2	6.1	5.1	4.8	7.5	6.8	6.1	5.6	5.6	6.3	4.5	5.6	5.3	6.0
CROSSFIRE	6.8	5.6	4.7	5.7	6.8	6.0	6.4	4.8	6.3	4.8	5.0	7.5	6.9	6.0	5.5	5.5	6.3	4.2	5.1	3.7	6.0
AVANTI	6.6	5.5	4.6	5.4	6.7	5.5	6.6	5.2	5.9	5.0	4.8	7.5	7.1	6.0	5.6	5.6	6.1	4.7	6.3	5.0	6.0
VEGAS	6.9	5.6	4.8	5.0	6.5	5.4	6.5	5.0	5.6	5.0	5.1	7.6	7.1	5.8	5.7	5.7	6.4	4.7	5.9	4.3	5.9
TRIBUTE	5.8	5.0	4.5	4.9	6.9	5.7	6.1	5.0	6.2	5.0	4.7	7.4	6.8	6.1	5.6	5.7	6.3	4.8	5.3	3.7	5.9
PHOENIX	5.9	5.0	4.8	5.5	7.0	5.5	6.0	5.2	6.1	4.8	5.1	7.2	6.7	6.2	5.6	5.7	5.9	4.9	5.7	2.3	5.9
THOROUGHbred	5.8	5.3	4.6	4.7	6.9	5.6	5.7	5.2	6.3	4.1	4.8	7.2	6.6	6.0	5.3	5.5	6.0	4.8	6.6	5.7	5.9
ELDORADO	6.8	5.3	4.5	5.1	6.6	5.4	6.2	5.0	5.4	4.6	5.0	7.5	6.9	5.7	5.8	5.7	5.8	5.1	4.7	4.3	5.9
SHORTSTOP	6.3	5.5	4.5	4.6	6.5	5.3	6.4	5.0	5.1	4.5	4.7	7.6	7.0	6.0	5.5	5.8	6.4	4.4	6.0	6.3	5.9
OLYMPIC II	5.5	5.2	4.9	5.3	6.9	5.7	6.1	4.8	6.0	5.0	5.1	7.2	6.4	5.8	5.5	5.6	6.1	5.3	6.2	5.3	5.8
REBEL II	5.3	5.4	4.7	5.1	7.0	5.5	6.0	4.9	6.5	4.6	4.7	7.2	6.5	6.2	5.6	5.4	6.1	4.9	5.3	4.3	5.8
BONANZA	5.6	4.9	4.8	5.1	7.4	5.6	6.0	4.8	6.0	5.0	4.7	7.4	6.7	5.9	5.1	5.6	6.2	4.9	5.3	4.0	5.8
WRANGLER	5.7	5.2	5.0	5.2	7.0	5.6	6.2	5.2	5.8	4.7	4.6	7.3	6.4	6.0	5.4	5.4	6.1	5.1	4.4	4.7	5.8
WINCHESTER	6.1	5.0	4.2	4.9	6.9	5.5	5.4	4.9	6.1	4.9	4.5	7.3	6.7	5.9	5.6	5.7	5.9	5.3	5.6	6.7	5.8
MAVERICK II	6.5	5.4	4.8	5.3	6.5	5.6	5.9	4.6	6.0	5.0	4.7	7.3	6.8	5.8	5.5	5.5	6.3	5.3	6.7	4.0	5.8
CHIEFTAIN	5.9	5.4	4.9	5.6	7.3	5.6	6.2	5.1	6.3	4.8	4.4	7.2	6.5	5.9	5.6	5.7	6.1	4.9	5.7	3.3	5.8
MESA	5.5	4.5	4.5	4.7	6.9	5.5	5.8	4.9	5.5	4.5	4.8	7.1	6.6	6.0	5.0	5.5	6.1	4.9	5.0	5.7	5.8
ANTHEM	6.9	5.3	4.1	4.8	6.7	5.2	6.2	5.0	5.7	4.5	4.5	7.5	6.7	5.9	5.2	5.6	6.2	4.1	6.7	2.7	5.8
TRAILBLAZER	6.0	5.1	4.8	5.4	7.2	5.8	6.3	5.5	5.5	5.4	4.8	7.2	6.7	5.6	5.0	5.3	5.6	4.7	6.1	4.3	5.8
ARRIBA	6.3	5.2	4.7	5.2	6.8	5.6	6.0	5.2	6.1	4.8	4.6	7.3	6.3	6.1	5.3	5.6	6.2	4.5	4.4	5.7	5.8
SILVERADO	6.6	5.0	4.3	4.9	6.6	5.6	6.8	4.9	6.0	4.7	4.3	7.5	6.6	5.9	5.3	5.3	5.9	3.9	5.3	4.7	5.7
OLYMPIC	5.1	4.7	5.1	5.3	6.9	5.4	5.6	5.1	6.0	4.6	4.8	7.0	6.3	5.7	5.3	5.8	5.5	4.7	6.3	5.0	5.7
JAGUAR II	5.2	4.7	4.7	5.2	6.7	5.7	6.1	5.2	6.1	4.5	4.6	7.1	6.6	6.2	5.0	5.2	5.8	4.6	5.3	5.0	5.7
TRADITION	5.6	4.9	4.5	5.1	6.9	5.6	5.6	5.1	5.5	4.8	4.3	7.2	6.3	5.9	5.4	5.3	6.1	4.4	5.7	5.7	5.7
TWILIGHT	6.0	5.0	3.8	4.7	6.8	5.2	4.9	4.6	5.3	5.3	5.0	7.2	6.5	5.4	5.0	5.3	5.6	4.3	6.6	5.3	5.7
SUNDANCE	5.4	5.2	4.0	4.4	6.8	5.6	5.4	4.8	5.6	4.7	4.4	7.1	6.4	5.7	5.3	5.8	5.8	4.8	5.4	5.7	5.7
APACHE	5.1	4.9	4.6	5.0	7.0	5.5	5.6	5.1	5.8	4.9	4.3	6.9	6.7	5.9	5.7	5.4	5.6	5.2	6.5	2.0	5.7
TITAN	5.1	4.8	4.3	4.7	6.8	5.7	5.3	4.8	5.5	4.5	4.6	6.8	6.3	5.9	5.6	5.6	6.0	5.2	5.2	4.3	5.7
BARNONE	5.1	4.9	4.3	5.0	6.9	5.2	5.9	4.9	5.3	5.0	4.8	7.3	6.5	5.8	5.3	5.1	5.7	4.4	5.2	3.7	5.7
TAURUS	4.8	5.1	4.6	4.6	6.8	5.6	5.5	4.9	5.0	5.0	4.9	7.2	6.1	5.7	5.5	5.1	5.7	5.2	6.0	4.7	5.7
BRAHMA	5.7	4.8	4.5	5.0	6.7	5.4	5.9	4.9	5.1	4.8	4.8	7.1	6.5	5.4	5.4	5.4	5.3	4.4	5.2	4.3	5.7
CIMARRON	5.3	4.5	4.7	5.1	7.0	5.3	5.4	4.5	5.5	5.0	4.9	7.3	6.6	5.7	5.4	5.4	5.2	4.6	4.7	5.3	5.7
ARID	4.5	4.5	4.6	5.2	6.3	5.7	5.3	5.0	5.7	5.0	4.5	6.7	6.2	5.6	5.4	5.3	5.8	4.7	5.4	5.0	5.6
FINELAWN 5GL	4.7	4.6	4.3	4.9	7.1	5.5	5.6	5.0	5.2	4.9	4.3	6.9	6.3	5.8	5.5	5.5	5.8	5.2	5.8	5.0	5.6
JAGUAR	4.5	4.5	4.6	4.8	7.0	5.5	5.5	5.2	6.2	4.9	4.8	6.9	6.1	5.9	5.3	5.3	5.7	4.3	5.4	4.7	5.6
REBEL	4.3	4.3	4.7	5.1	6.6	5.5	5.0	5.1	6.0	4.7	4.5	6.8	6.1	5.9	5.3	5.2	5.5	4.7	5.7	5.3	5.6
CAREFREE	4.8	4.6	4.1	4.8	6.5	5.3	5.3	5.1	5.2	4.2	4.5	6.9	6.4	5.4	4.9	5.2	5.6	4.9	6.2	5.7	5.6
MURIETTA	5.5	4.7	4.3	4.8	6.8	5.3	5.9	4.9	5.5	4.5	4.0	7.2	6.4	5.3	4.7	5.0	5.9	4.6	6.0	4.3	5.6
TRIDENT	5.3	3.6	4.5	4.6	6.6	5.2	5.3	5.1	4.9	4.8	4.8	7.1	6.3	5.4	5.3	5.0	5.4	4.8	5.7	4.3	5.5
ADVENTURE	4.2	4.5	4.5	5.1	6.9	5.1	5.6	5.1	5.5	5.0	4.3	6.6	5.8	5.5	5.2	5.3	5.3	4.5	5.1	3.7	5.5
EMPEROR	5.7	4.7	3.8	4.3	6.3	5.2	5.8	4.6	5.3	4.6	4.7	7.1	6.8	5.6	4.7	5.3	5.8	3.8	4.8	5.0	5.5
FALCON	3.9	4.1	4.4	4.8	6.9	5.5	4.9	4.9	5.4	4.8	5.0	6.4	5.8	5.6	5.3	5.3	5.5	4.8	5.2	6.3	5.4
PACER	3.6	4.2	4.1	4.4	6.4	5.6	4.5	4.8	4.8	4.7	4.7	6.6	5.6	5.2	5.1	4.9	5.4	4.7	5.7	5.3	5.4
FINELAWN I	3.9	3.8	3.9	4.3	6.8	5.5	4.7	5.0	5.5	4.6	4.3	6.4	5.6	5.3	5.2	5.0	5.4	4.9	4.4	3.7	5.3
WILLAMETTE	3.9	3.3	4.3	4.7	6.9	5.3	4.7	4.7	4.7	4.7	4.4	6.4	5.7	5.3	4.8	5.1	5.1	4.7	6.1	3.0	5.3
RICHMOND	3.6	4.0	4.1	4.6	6.2	5.3	4.7	4.6	5.1	4.3	4.8	6.5	5.6	5.2	4.7	4.8	5.3	4.6	5.4	3.3	5.2
AQUARA	3.6	3.7	3.9	4.2	6.8	5.2	4.5	4.7	4.1	4.5	4.6	6.0	5.8	5.2	5.0	5.1	5.2	4.4	5.1	5.0	5.2
FATIMA	3.3	3.6	4.0	4.4	6.4	5.5	4.5	4.7	4.6	4.4	4.3	6.3	5.5	5.6	5.0	5.3	5.2	4.6	5.6	1.7	5.2
TIP	3.3	3.5	3.6	4.0	6.4	5.5	4.6	4.9	4.9	4.6	4.8	6.3	5.6	5.2	5.1	5.0	5.0	4.6	5.4	5.0	5.1
K4-31	2.4	3.1	3.5	3.9	6.4	5.4	3.4	4.6	4.1	4.4	4.2	5.1	4.6	5.0	5.1	4.5	4.4	4.3	4.3	3.7	4.7
LSD	0.5	0.4	0.6	0.5	0.5	0.5	0.4	0.6	0.8	0.8	0.9	0.4	0.3	0.3	0.5	0.5	0.3	0.7	1.1	2.9	0.1

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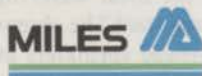


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Low-water-use zones in the landscape

If you can group plants by water requirements at the design stage of a landscape, you'll end up saving clients water.

■ You don't have to turn to desert plants to conserve water, says Ray Rothenberger, an extension agent for the University of Missouri-Columbia.

To make landscapes more water-efficient, you need to group plants into at least three major water-use areas based on yearly water needs, Rothenberger says. These zones will fit most sites, but some landscapes will use only one or two. The idea is to keep the zones separate so that only the water necessary is used.

Low-water-use zones in the landscape receive no additional watering after plants are established. Natural rainfall is the only water source, even during a drought. Plant examples for this zone include native perennials and shrubs such as forsythia.

"A good way to determine which plants will endure in a landscape without extra water is to observe the native plants," Rothenberger says.

In the moderate zone, water is added during establishment and drought stress. Plants selected for this zone, Rothenberger says, should be drought tolerant, such as needled evergreens.

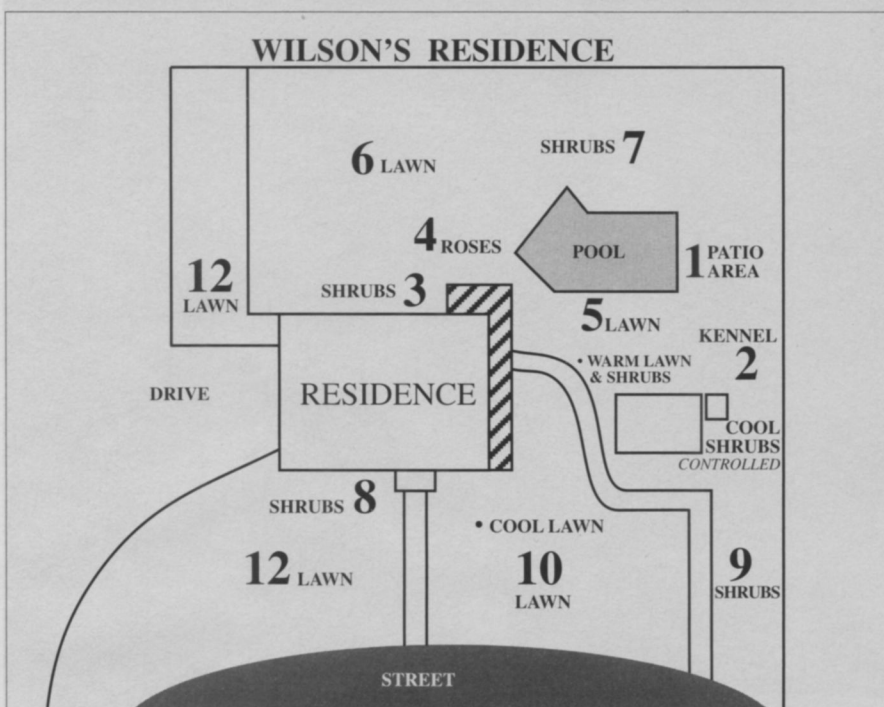
Plants located in the high-water-use zone are watered when needed. In this zone, plants are selected for special needs or hobby interests of the residents. Without regular watering, these plants will not survive even minimal drought stress without damage, he says.

Rothenberger suggests that these high-use areas be focal points in the landscape and kept green and attractive at all times. Examples include azaleas, rhododendrons and annual flowers.

Rothenberger says plants in the high-use category need an inch of water a week; in 80-90 degree weather, two inches of water is needed. "This is rainfall and watering for total watering, so a rain gauge is important," he observes.

"If overhead sprinklers are used," he continues, "scatter some large cans around to gauge the time it takes the sprinkler to fill an inch.

"If you get some run-off, stop for a



Breaking up a client's landscape into 'hydrozones' can help solve irrigation problems. Further refinement can be made by 'grouping' plants according to water requirements when designing the property.

while and let the water soak in. After a couple of times, you'll know roughly whether it took an hour or two hours to accumulate that water that is needed."

Generalizations about soil are hard to make because there are so many different types, slopes and infiltration rates.

"People have done this for a long time, but we have had a number of droughts and the rainfall continues to be erratic," Rothenberger notes. "So the people who prepare will have less expense and lose fewer plants. A well-planned, water-efficient landscape will better survive without spending a lot of time and money watering."

The same principles can be used in determining "hydrozones" of your clients' landscapes, according to Marsha Prillwitz of the California Department of Water Resources.

"Grouping plants together in a hydrozone area is one way to save water in the long run," she says. "We have very little scientific data on plant water needs. But we do have very good data on turf and we know native plants don't need any supplemental irrigation."

Going native in urban landscapes

■ A native plant is any tree, shrub or flower that occurs naturally in a region and is ideally suited to grow there.

"When appropriately placed in the landscape, native plants will grow as they do in their natural habitat with a minimum of care," says Dr. John Frett, ornamental horticulture professor at the University of Delaware.

"If you're pampering a native plant, the most likely reason is an unsuitable location."

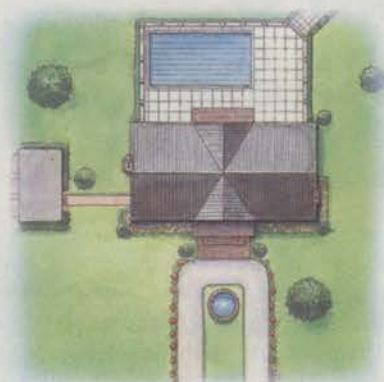
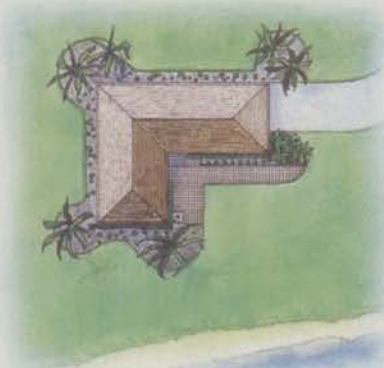
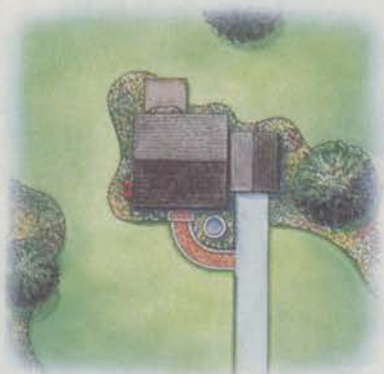
Examples:

● The beech tree does well in a woodland setting, but it doesn't stand up to the compact soils, foot traffic and concentrated car exhaust of populated areas.

● "The spiceplant grows well, requires little maintenance and provides a nice complement to trees and perennials" in Delaware.

● "Mountain clethra is another example of a hardy plant, which in winter displays its beautiful multi-colored, peeling bark, adding interest to an otherwise bare landscape."

● Though they are non-native to Delaware, the Norway maple, bridal-veil spirea and Chinese dogwood have thrived there for a long time.



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STRICTLY GOLF



Superintendent Bill Black is proud of the way his crews handled heavy rain last summer, not to mention the stone bridge, shown here, they built themselves.

Congressional C.C. goes to great lengths to handle heavy rain

■ An extremely wet summer was not conducive to maintaining golf courses in the East and Midwest last year. It meant that superintendents had to go that extra mile to provide playable conditions. That was much the case at the prestigious Congressional Country Club, where U.S. senators and congressmen, and business leaders, are among 1,700 playing members.

"Last season started out as a super summer because there wasn't any humidity," notes superintendent Bill Black, who's been at Congressional for 13 years. "But it turned out to be an extremely wet and humid summer."

When conditions are wet for any length of time, certain problems are sure to pop up, as they did at the Congressional:

● "Cutting to almost 1/8th of an inch can have an effect on golf courses," notes Black. "We end up having certain diseases and algae." He uses Fore, Manzate and Dithane, along with heavier doses of Daconil. "They don't control the diseases, but they check it," he says.

A disease-related problem particular to the Congressional was drainage. Sand bunkers became black-layered because of all the moisture, which plugged up drainage. So Black's crews had to dig up all the sand and clear the drains.

● "There are days you have to restrict golf cars, too," Black further notes. "We didn't allow golf cars over Labor Day Weekend. It's not something we like to do, but the members are generally

pretty considerate."

● Bunker washouts are the most difficult problem to deal with. "Fridays, the bunkers are in great condition and you're ready for the weekend," he says, "and then a big storm hits on Friday night. It's impossible to get them back in shape."

He noted that workers once spent 50 man-hours on a Saturday pushing sand back up into the bunkers, "and you couldn't tell we did anything."

Despite summer's rains, Black and his crews kept Congressional Country Club's ryegrass and bermudagrass fairways and Pennlinks greens the envy of area golfers. It has been the site of seven Kemper Opens and will host the 1995 U.S. Senior Open and 1997 U.S. Open. It is also (former) Vice President Dan Quayle's home course.

Black, a Penn State University gradu-



Overcast weather and a light drizzle, typical of last summer's weather, doesn't keep crews from mowing the Congressional's greens.

ELSEWHERE

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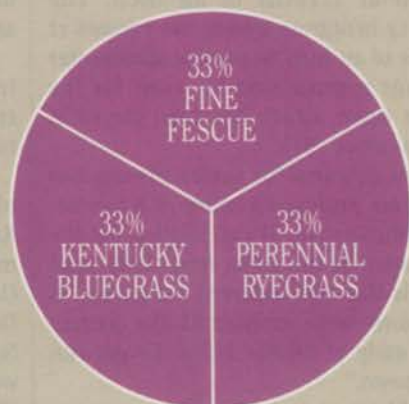
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ate, has been on golf courses virtually his whole life. As a five-year-old boy, his backyard and playground was Hershey (Pa.) Country Club. He was superintendent at Fountainhead Country Club in Hagerstown, Pa., for 13 years before coming to Congressional. He has easily adapt-

ed to his current surroundings.

"We have 500 acres I can roam around on," he says. "It's difficult to hide in your own world any more as a golf course superintendent, anyway."

"The exposure I have with a different cross-section of people is something I

value very much. In a normal job, you don't get to meet doctors, lawyers and senators."

"You get a nice, crisp day when the sky is blue, the grass is green...there's nothing like it."

—Jerry Roche

Management practices, not turf species, are key at this 'course of a different texture'

'Zoysia...a good grass for both high and low handicappers...has a kind of bounce to it,' says Dick Stuntz.

■ What might work for one golf course superintendent might not work for another. Likewise, what might work for maintaining one type of turfgrass might not work for another.

Alvamar Country Club in Lawrence, Kansas, is perhaps the prime example of this golf course truism. There, superintendent Dick Stuntz maintains zoysiagrass fairways and Cohansy bentgrass greens, two highly unusual grasses for this part of mid-America.

Yet, using state-of-the-art management practices, Stuntz has shaped Alvamar's 18 country club holes into one of the finest and most-honored courses in the nation.

"Alvamar has had zoysia fairways and tees since its inception in 1968," notes Stuntz, "so it was a major concern to change the grasses I was tending when I came here in 1983." He credits his zoysia education to Roger Knoll, the superintendent at Old Warson in St. Louis. "I took a zoysia lesson from him," Stuntz says. "It took some time and work."

The most difficult aspect of having zoysia is not its maintenance but its establishment—from sprigs, not seed or sod. Yet the positives—at least here, 30 miles west of Kansas City—far outweigh the negatives.

"Zoysia has a kind of bounce to it," Stuntz says, ticking off a number of favorable characteristics. "Its dormant play is much better than bermudagrass. It's got a golden dormant color. It's a good grass for both high and low handicap players because it's coarser and the ball sits right



Dick Stuntz likes the look and feel of zoysiagrass tees and fairways, and Cohansy bentgrass greens. The golf ball easily sits upright on the zoysia (right).

up on top of it."

Cohansy is, Stuntz says, "a very sensitive bentgrass." It is finer-bladed and more upright, and it has a more consistent texture than Penncross, the accepted industry standard, Stuntz observes. Though Cohansy is highly pythium-tolerant, pesticides mixed from emulsifiable concentrates (ECs) will damage it, he continues.

The zoysia fairways and tees are mowed at 7/16ths of an inch. The Cohansy bentgrass greens are mowed at 6/64ths of an inch to provide stimp meter readings approaching 10, even for the Kansas Open, which has been played at Alvamar since 1975.

"The demand for faster greens has made our profession more of a profession," Stuntz says. "It's all relative, but the expectation of the golfer from 1967 until today is like two different ballgames. If this course were maintained like courses of the early to middle 1970s, I'd get run out of town."

He blames televised golf tournaments and the advent of the stimp meter, which can quantitatively measure green speed, for golfers wanting faster green speeds.

This demand has necessitated lower cutting heights, which in turn causes an increase in *Poa annua* infestation. Stuntz's answer to poa encroachment might be applications of Scott's TGR, a turfgrass growth regulator that has shown in university tests to affect poa.

"But Cohansy is very sensitive, and Scott's TGR is touchy stuff," the veteran superintendent notes. "So I'm going to be right there when we do the mixing and applications."

The Alvamar complex (which also features an 18-hole public course with another 18 holes on the drawing board) maintains a three-acre Cohansy nursery.

Owner/president Bob Billings, who played basketball at the University of Kansas with Wilt Chamberlain, keeps communication lines open—out of necessity. One of the country club's members is David Robinson of the NBA's San Antonio Spurs, who owns a home along one fairway. He and other basketball stars, like Chicago's Michael Jordan, play some of the 30,000 rounds at Alvamar each season. And the adjacent public course plays host

continued on page 46

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to an additional 45,000 rounds annually.

"I get five compliments for every one complaint," notes Stuntz, a 1975 Iowa State University graduate. "I focus on the negative and try to figure out how to correct the complaints. You can accomplish all your agronomic objectives and still lose your job if you don't communicate."

—Jerry Roche

An opinion: green speed kills

To the editor:

I would like to reply to Jim Prusa's article which appeared in your August issue.

Jim says "the best superintendents set very high standards for themselves and demand the same from those around them." This is very true and typifies the qualities of the golf course superintendent. He or she is very dedicated, strives for the best playing conditions, and is very much a professional.

However, I strongly disagree with the statement Jim made when he said, "Let's stop searching for ways to lower our standards." Let's define what the standards are!

When the standards are excessive speed on greens which relate to mowing heights of 1/10th of an inch or less, then I feel that the standards are wrong. What is happening is that many of the golfers expect day-to-day conditions at our courses to be like those at a major PGA tournament. This relates to conditions which bring about a decline in the quality of turf found on the greens: thin turf, algae, ball marks and old cup plugs not healing, disease, and an increase in labor to hand-water and "babysit" all the greens. Even the USGA Green Section is preaching the evils of excessive green speed.

The quality of playing conditions on golf courses has greatly improved in the past decade due to the professionalism of the golf course superintendent. I am very confident that these conditions will remain at the highest level in the future.

However, common sense still has to prevail when the expectations of the golfers reach a point which relate to the decline and health of the turf. As one golf course superintendent related, "Speed kills—the green or the golf course superintendent, or both."

—Dave Fearis, CGCS
Blue Hills Country Club
Kansas City, Mo.

WHAT'S NEW IN COURSE MAINTENANCE

Wastewater symposium in Newport Beach, Calif.

FAR HILLS, N.J.—The USGA, in cooperation with four other golf organizations, will co-sponsor a Golf Course Wastewater Symposium on March 4-5 at the Newport Beach (Calif.) Marriott Hotel.

Effluent water from sewage treatment plants and wastewater from other sources have been playing an increasingly important role in golf course irrigation, as the use of potable water for irrigation comes under public scrutiny. The Wastewater Symposium will bring together turf managers, engineers, agronomists, architects, manufacturers and others.

For more information, contact Dr. Michael Kenna (405-743-3900) or Dr. Kimberly Erusha (908-234-2300) at the USGA.

Other sponsors are the American Society of Golf Course Architects, the Golf Course Builders Association of America, the National Golf Foundation and the GCSAA.

Hurdzan notes irrigation changes in greens design

COLUMBUS, Ohio—Golf course architect Mike Hurdzan sees some changes in golf course design on the horizon.

"It appears that there will be more irrigation around greens using two or three systems of sprinkler heads," he notes. "Instead of one sprinkler which applies water uniformly over a circle, the trend now is to recognize that greens have different water requirements than their surrounding collars, aprons or banks."

"Therefore, where construction budgets permit, one set of sprinklers is installed to water the putting surface, and another to supplement or separately water the non-putting areas around the greens. And in some instances, a third set of small lawn heads just to water green mounds."

This evolution is thought to have begun by Eb Steinger at Pine Valley about 20 years ago. It spread to Augusta National and "now is becoming commonplace on even modest budget public facilities," Hurdzan says.

Mechanics must know turf game

FAR HILLS, N.J.—Mechanics who work on golf course equipment must know the turf business, according to Tim Moraghan, agronomist for championships for the USGA Green Section.

Writing in "Hole Notes," Moraghan says "not just anyone should be assigned the responsibility of repairing and adjusting a cutting unit."

Moraghan says golf course mechanics must have a well-rounded understanding of his job, including:

- an understanding of the principles of mowing and its effect on the turfgrass;
- a basic knowledge of putting green agronomics;
- a "golfer's eye" and realizing the premium placed on putting quality; and
- conscientiousness and pride in the results.

"Your mechanic must have a thorough understanding of what will occur if the greens aren't up to speed," Moraghan notes.

Rutgers conducts turf schools

NEW BRUNSWICK, N.J.—Cook College of Rutgers University is offering three special turf schools next month: an advanced turfgrass management symposium (Feb. 8-9), a clinic on site analysis and modification (Feb. 17 and 24) and "Advanced Management Program for Golf Course Leaders" (Feb. 22-26).

For more information, call (908) 932-9271 or write Office of Continuing Professional Education, Cook College, P.O. Box 231, New Brunswick, N.J. 08903-0231. For information via fax, transmit to (908) 932-8726.

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THERE'S NOTHING LIKE IT ON TURF

Defeating the 'Rodney Dangerfield Syndrome'

by Arthur Jamison

■ Although I have been in this business for 10 years, I realize that there is still a lot to learn. But the one thing that continues to really bother me, and that is the basic lack of respect for the superintendent as a professional.

Golf course superintendents must be experts at fertilizers, pesticides, equipment, turfgrass, weather and planning. Add other topics and hundreds of subtopics, and we have more to manage than the average person could possibly imagine.

One day, we are involved in the decision of where we should spend \$500,000 in improvements, whereas the next day we're fixing the toilet paper holder in the restroom by the No. 14 green.

I certainly did not write my thesis in college on professionalism. Yet it doesn't take a rocket scientist to realize that the golf course superintendent *does* belong among the top management personnel in his club.

Exactly where in the hierarchy does he belong? Should he be above the manager, above the PGA professional? Perhaps, perhaps not. But I know one thing: if a club had to operate without one key person, it would not be the superintendent.

So let's get back to the superintendent as a professional.

How do your members, department heads and golfers look at you? As the guy with the shovel in his hand? Or do they see you as the guy who has the secret ingredient for making grass grow?

A parable—I was told this story by one of my teachers in college (who, by the way, had his master's degree in horticulture):

After he'd graduated, he was working for his father, who owned one of the largest landscaping firms in the San Francisco Bay area. He was servicing an account one day and saw a flower bed that needed some weeding. As he was bent over pulling weeds, he overheard two businessmen comment that if this laborer would have graduated from high school he might have been able to acquire a better job.

What a perfect scenario for us superintendents! How many times have you gotten "that look" from a golfer? ("The poor guy; if he had at least finished high

school...") And I think, "how wrong you are." I am outdoors all day thoroughly enjoying myself, and making damn good crispies to boot!

I once had a golfer ask me why I was planting flowers in October. He literally laughed at me while informing me that they would be dead by winter's end. I intended to inform him that this flower was a pansy and could survive the winter, but the man was gone before I could explain.

Where's the respect?

How do you explain your profession? Well, I'm still learning, and this last year has taught me a lot.

Number one—is communication. Talk with your department heads, members, men's and women's golf associations, golf and green committees. Let all that knowledge inside your gray matter spill out. Take the opportunity, when asked a question, to show that you are not just an overpaid weed-puller.

(But don't buffalo them. That doesn't help anyone. If you don't know, tell them you will find out and follow through.)

I have had the opportunity to explain certain problems we are having on the golf course, and people have responded respectfully because I know what I'm talking about.

We have the opportunity each day to talk to anyone in the club from the dishwashers to the president of the men's golf association. What opportunities to show

ourselves off!

Number two—is the golf course. If you have all the knowledge of a turfgrass guru, but your members are putting over crabgrass, you'll have a respect problem. The golf course is a huge picture we get to paint every day. You can get a lot of respect if you use the proper colors.

We have a way to go yet before we're accorded the same respect as the medical profession. But my attitude has changed. Instead of being sarcastic and reactionary in a situation, I fall back on my knowledge as a golf course superintendent—or, if I don't know the answer, I call a colleague.

I bet I've made four or five phone calls to other superintendents in the last six months wanting information. I've always learned something I didn't know before. Never did I feel they didn't have the time to talk to me.

One thing that has evolved from all of this is that more people are coming to me for advice or information. More and more frequently, I am getting flagged down on the golf course to answer questions. It makes me feel that all these years of hard work are paying off.

Pay me \$100,000 a year and I'll feel good, but give me a little respect and I'll feel like a king.

—Arthur Jamison
is golf course
superintendent at
River North
Country Club in
Macon, Ga. This is
reprinted from
"Through the
Green," the maga-
zine of the Georgia
GCSA.



\$100 for your opinions, observations

■ Do you have an opinion or observation on the art/science/profession of being a golf course superintendent?

Every month, LANDSCAPE MANAGEMENT will publish a super's view of the industry as part of its "Strictly Golf" section.

We are soliciting the opinions/observations of golf course superintendents, much like those expressed by Arthur Jamison this month.

Topics can range from professionalism to employee relations to greensmower selection to treating turf diseases. Or anything in between that is of value to your fellow superintendents.

If you have such an idea you wish to express, type it, double-spaced, on plain white paper, 750 words or less. Send it, along with your Social Security number and a recent photo, to:

"Strictly Golf"

LANDSCAPE MANAGEMENT
7500 Old Oak Blvd.
Cleveland, OH 44130

Upon publication, the superintendent will be paid \$100 for his or her contribution. (We reserve the right to edit material for length and grammar. Non-returnable unless accompanied by a self-addressed, stamped envelope.)

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- **TRIMEC® 992:** The applicator's formula especially designed for tank mixing with liquid fertilizer or other combinations. One gallon covers 2.66 to 3.5 acres.
- **TRIMEC® Encore®:** A Trimec Complex that replaces 2,4-D with MCPA. One gallon covers 1.75 to 2.66 acres.
- **TRIMEC® Bentgrass Formula:** Especially designed for use on bentgrass. One gallon covers 2 to 2.66 acres.



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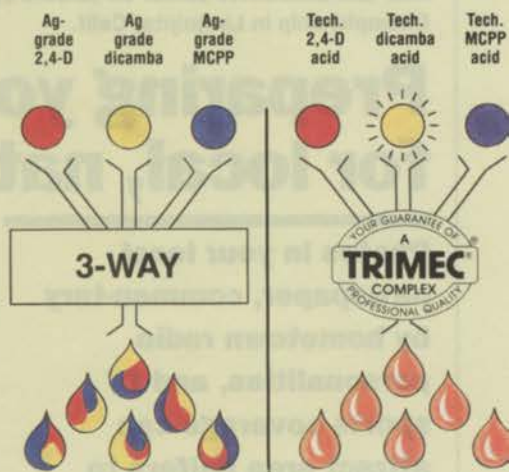
Minimum Active Ingredients: A broadcast spray of Trimec Classic at maximum label strength releases about one-third ounce 2,4-D; one-sixth ounce of MCPP; and four-one-hundredths ounce of dicamba per 1,000 square feet.

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From the very first day that we introduced Trimec in America, it has been famous for dependability. Although other 3-way herbicides are available, only Trimec gives you the absolute optimum in synergistic performance time after time. Why? Because of the way we make Trimec Broadleaf Herbicides.

In a standard 3-way tank mix, the droplets are not always identical, so there can be discrepancies in control. In a Trimec complex, every droplet is identical, for weed control you can count on — time after time.

Circle No. 122 on Reader Inquiry Card



Color code: Red, 2,4-D; yellow, dicamba; blue, MCPP; amber, Complex acid. Note: Colors are for code only and do not indicate the color of the product they are intended to identify.

The schematic drawing above indicates that, in a formulator's tank-mix (left), the molecules of 2,4-D, MCPP, and dicamba do not combine to form a new molecule. Accordingly, each droplet will be different and control may vary from droplet to droplet.

In a Complex (right), the three acids are reacted together to form a salt. Every droplet is identical, and thus precisely optimizes the intended synergistic activity.

The differences between a tank-mix and a Complex become significant when the goal is aesthetic excellence.

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Taping for TV coverage will take place at the heart of your course. Here a cameraman and announcer confer on camera angles for coverage of the John Deere Team Championship in La Quinta, Calif.

Preparing your course for local, national media

Photos in your local newspaper, commentary by hometown radio personalities, and TV sports coverage can attract area golfers to your course.

by Steve Trusty, Bob Tracinski

■ It's show time! Broadcast crews and print reporters will invade your golf course to cover the big event. Reporters and "analysts" will dissect the playability and aesthetics of your facilities; the competence and cooperation of your staff.

Accommodating the needs of these invaders will take extra time and lots of work, but—done well—the rewards are well worth the effort.

"The exposure is the pay-off," reports W. Scott Lewis, superintendent of the TPG Stadium Course and The Jack Nicklaus Resort Course at PGA West, La Quinta, Calif.

Lewis is accustomed to working with the media. The Grand Slam, November 10-11th, 1992, was followed one week later by the John Deere Team Championship Golf Tournament. "For the last Grand Slam held here, we had eight hours of cable TV coverage," Lewis remembers. "Viewers could see what we have to offer and think, 'I'd like to play that course; I'd like to try that shot.'"

Naturally, you try to keep the course in top condition for any play, but when TV cameras will be rolling, strive to be as close to perfect as possible.

"Watch the details," cautions Lewis. "Little things can look pretty big when flashed across the TV screen."

"Once you learn a media-covered event is scheduled, do as much advance planning as possible. For an event as important as the Skins Game or Grand Slam, we find it easiest to schedule in reverse."

"Work backward from the date of the tournament to establish the proper timing on procedures. Planning is the real key. You need to know what can and must be done—and when to do it. You want to be ready before the first camera shows up."

For example, Lewis notes, if it's going to take 10 days to edge the cart paths, work backward from the scheduled event to make sure the work is completed. Time overseeding so the new grass is ready for daily mowing. Increase seeding rates drastically if necessary to attain full turf in a limited time span. Green speeds should be ideal. Time your topdressing procedures accordingly.

Weather is a major factor to consider. What time of year will the event take place? What delays could weather conditions cause? What procedures might need to be postponed or moved ahead to accommodate inclement weather? What materials and equipment need to be on hand to compensate for problems?

Communicate special procedures to your staff. For example, if you're going to

Media coverage idea file

■ Other ideas from California superintendents W. Scott Lewis and Michael J. Tellier:

- Obviously, you must comply with golf rules. Pay special attention to the height of cut, bunker raking and bunker sand content.

- Pull sand away from the bunkers, hand rake the area and make sure that no rocks have been pulled to the surface.

- The greener the grass the better. Deep green shows up well on the TV screen and in color photos. Decide on mowing patterns and keep them consistent throughout the course.

- If your course has notorious wet areas, make sure those spots are drained well in advance of the special event. Have extra pumping equipment and squeegee-type tools on hand in case irrigation problems occur. Order extra sand and organic wood chips for use if needed.

- Spend extra care on trimming and cleanliness in the perimeter areas as well as the course itself.

- Aesthetics are important. Enhance the background prior to the event. Reseed thin or lackluster turf. Plant flowers and add more color to existing flowerbeds. Use flowers to highlight the corporate logo or some distinctive feature of the facility.

- Expect to pull in extra help to prepare for a major tournament. Divert employees from other departments or use temporary personnel for supervised tasks.

- Try to have the course ready when the practice rounds start, which is usually two days ahead. The players don't want to cope with changes during the actual competition.

- Once the event starts, make sure all crews are out of the way. Alert your staff to the procedures to follow.

- Be prepared for more work at the end of the event. There will be lots of clean-up. Grass will be matted down. Some repairs may be necessary.

be altering mowing patterns, review the material with your staff in time for them
continued on page 52

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Circle No. 137 on Reader Inquiry Card



Picture perfect means the course looks so inviting that those viewing it can see themselves playing on it—and may make plans to do so. (The Dunes Course at LaQuinta Golf and Tennis Resort, LaQuinta, Calif.)

MEDIA from page 50

to make the proper adjustments.

Michael J. Tellier, Golf Course Superintendent of the Dunes and Mountain Courses of the LaQuinta Golf Club, LaQuinta, Calif., whose Dunes Course served as a venue for the John Deere Tournament, also is skilled in work-

ing with the media. He adds these suggestions on course preparation:

"Communication is vital," says Tellier. "The advance production staff for television coverage usually comes to the facility two months prior to the event. For annual events, we start preparing for the coming year the day after the current event ends."

The superintendent is becoming more recognized as a factor in golf course success by the media, especially over the last five years, according to Tellier.

Go over the course with media advance personnel, looking for eyesores. "See what has to be done and develop a priority list, tackling the major problems first; then the minor ones," Lewis says.

Tellier says you should take this opportunity to determine what camera angles they wish to use; to mark areas for towers; to determine special angle shots, etc. Decide if trees must be trimmed for sight lines to make sure the shots will be "clean."

"View the course from the camera's perspective," Lewis recommends. "Know exactly what will be seen in shots from each position. How will normal care procedures affect the camera's picture?"

There's always give-and-take with media coverage. For example, there may be some discussion as to where to set up the announcing booth. The area needs to provide a good scenic angle, yet be out of play. It may be necessary to change a location choice to accommodate irrigation or computer lines.

"Keep an open mind," Lewis says.

The superintendent is becoming more recognized as a factor in golf course success by the media, especially over the last five years, according to Tellier: "Commentators like to relay information on course care during telecasts, so expect them to ask you questions to fill in their background material." They want details so that people who know the game of golf will understand why certain things look certain ways.

Both superintendents agree that something always comes up, but you can handle it if you plan ahead, schedule wisely, anticipate problems, work hard and follow up thoroughly. Then enjoy. Good media attention attracts new golfers to your course.

—Steve Trusty is President of Trusty & Associates, which provides consulting services to the horticultural trade. Bob Tracinski is manager of public relations for the John Deere Company in Raleigh, N.C.

POLLUTION CLEAN-UP INSURANCE FOR COMMERCIAL LAWN CARE FLEETS AND EQUIPMENT

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REEMAY

HOT TOPICS

MSU readies turf for first World Cup soccer indoors

Four first-round games at Pontiac Silverdome in 1994 will showcase the efforts of researchers to millions of television viewers.

EAST LANSING, Mich.—A team of Michigan State University researchers is promising world-class playing conditions for the World Cup soccer games scheduled for Pontiac, Mich., in 1994.

That means only one thing to FIFA, the tournament's governing body—turfgrass. Real, living, growing turfgrass. FIFA reportedly wouldn't have agreed to the Silverdome site without the guarantee of a real turfgrass playing surface.

This presents a huge challenge to the MSU team headed by Dr. John "Trey" Rogers and John C. Stier. The near-perfect turfgrass field they're promising will be *inside* the Silverdome.

The World Cup is a global competition. Several hundred million people worldwide will follow every kick, every scoring attempt of the four first-round games at the Detroit-area site June 17-July 17, 1994. Some of their attention will be focused on the condition of the playing field, since these will be the first-ever World Cup games played indoors.

Rogers and research assistant Stier updated MSU's World Cup involvement last November to about 30 media representatives.

The group crammed into MSU's "Silverdome West," a 6,500-sq.-ft. quonset structure on the MSU campus about 1 1/2 hours west of the real Silverdome. Its



About 2,000 of these hexagonal turfgrass containers will be fitted together to make World Cup soccer field inside the Pontiac Silverdome. MSU's 'Silverdome West' in the background.

dome is covered with the same fiberglass material and the same forced-air suspension system as the Silverdome.

Inside MSU's structure, banks of high-intensity lights illuminate dozens of 4x4-foot wooden boxes. The turfgrass in each box is growing under slightly different conditions—moisture, fertilizers, plant growth regulators, etc.

This past summer the researchers also tended and observed test plots inside the real Silverdome.

"We deliberately stressed the grass to see what it would take," says Rogers. "And it looked bad when the trials were over. But it was a successful effort."

Actually, the turfgrass will be inside the Silverdome only for one exhibition game in 1993, and, again, for the four games over nearly two weeks in June-July 1994. Researchers are confident the turfgrass

field will fare well in the exhibition game.

It *has* to perform well for the World Cup, Rogers and Stier say.

The turfgrass is being grown this winter in California by Pacific Sod. It is a mixture of 85 percent Kentucky bluegrass and 15 percent perennial ryegrass—three varieties of both, two of each chosen for wear tolerance, and one of each for shade tolerance.

In April the sod will be cut, rolled and shipped by truck to Michigan where it will be transplanted into hexagonal metal boxes filled with six inches of topsoil (8 parts sand, one part native sandy loam and one part Michigan peat). This work will take place in Pontiac.

Each hexagonal box is seven feet across and weighs 3,000 lbs. It will take 2,000 of them, plus some triangular and trapezoidal boxes, to cover the Silverdome's

ELSEWHERE

'Don't call them crazy,' says Senator, page 56

Publication made for consuming public, page 56

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John 'Trey' Rogers: MSU staff learning how to keep turfgrass healthy inside the dome.



John C. Stier: By June 1994 the turfgrass should be rooted to bottom of metal containers.

asphalt floor. They will be moved into the Silverdome a few days before next summer's exhibition game, then removed after the exhibition game to be reassembled and used as an outdoor athletic field.

"This will give the turfgrass an opportunity to mature," says Stier. "By the time the field is needed in 1994, the roots of the turfgrass should be to the bottom of the containers."

Just prior to the summer 1994 World

Cup, the field goes inside again.

The top of each box is slightly wider than the bottom, and the sides of the boxes are made in two pieces with the upper pieces being removed as the boxes are fit together. The boxes will fit together tightly with at least three inches of soil between the field's surface and any metal edges.

"We will look at the possibility of adding soil in the seams but we don't think it will be necessary," says Rogers.

The MSU staff is confident its work should add significantly to what's known about growing turfgrass in the shade.

"One possibility would be for shady fairways and greens," says Rogers. "A number of golf courses are already using plant growth regulators on problem areas. But it's all being done on a 'best guess' basis. We think our research should provide some answers as to how much to use under various conditions."

Also, it's likely researchers will come up with a list of recommendations for home lawn care under shady conditions.

Beyond that, additional work on finding materials that will allow much more sunlight (the Silverdome roof only lets in 10 percent of the available sunlight) may hasten the day when permanent indoor turfgrass surfaces can be maintained. This would allow the playing of outdoor sports on a year-around basis in northern states.

"We think we have a good, sound game plan," says Rogers, "But we have a lot of research to do."

—Ron Hall

Rep. Charles Stenholm: don't call them crazy

INDIANAPOLIS—U.S. Rep Charles Stenholm (D-Texas) says it's high time that pesticide-using industries and their critics, the so-called environmentalists, rediscover the seemingly lost art of give and take.

"Compromise is not a four-letter word," Stenholm told about 200 LCOs at PLCAA's annual conference here this past November. He asked the audience not to brand anti-pesticide critics as extremists. "When we say one of them is crazy, they say we're crazy," said Stenholm.

Instead, Stenholm said LCOs should "continually" put the facts about the products they use and the good things they do in front of their customers and, even, Congress. He urged the LCOs to maximize the impact of these facts by building coalitions with other pesticide-using industries, particularly agriculture.

"We have to show the public we can deal with their concerns in a very rational way," said Stenholm.

He admitted that neither lawn care nor agriculture has had much success in defending its use of pesticides. And that neither, by itself, carries a whole lot of



Rep. Stenholm tells LCOs to get to know 110 new members of Congress.

political clout.

But, he pointed out, there are indications that more and more working people are turning away from extreme environmental positions. They're afraid their jobs will be affected by even stricter regulations, he said.

—Ron Hall

Communicating benefits to your customer list

WASHINGTON—"Pesticides in Your Environment," a 16-page, full-color publication, explains to the public the health, safety and environmental benefits provided by the specialty pesticides you are applying.

It talks to consumers in language they can understand and apply when making decisions about specialty pesticide use. For instance:

Healthy trees can add up to 20 percent to the value of a home.

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The publication is being sold to the golf/landscape market through RISE (Responsible Industry for a Sound Environment), which is depending on golf course superintendents, landscape contractors and lawn care operators to deliver it to the consuming public.

For order forms or more information about the publication, contact RISE, 1155 15th St., NW, Suite 900, Washington, DC 20005; phone (202) 872-3860; fax (202) 463-0474.

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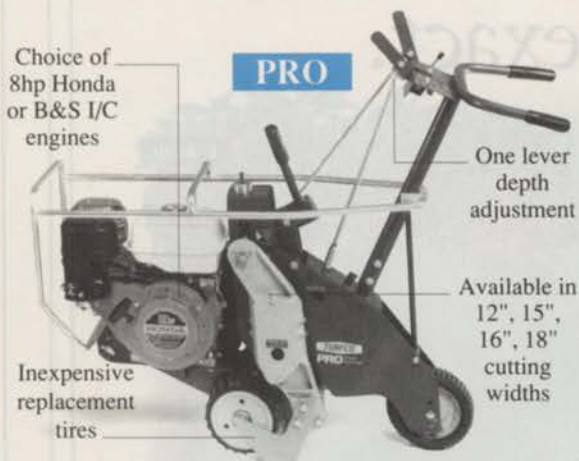
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INFO CENTER

Useful literature and videos for LM readers

WE ARE NOT DOOMED...

For anyone who suspects he's not being told the whole story regarding so-called "global warming" (and he's right), there's "Sound and Fury—The Science and Politics of Global Warming," by Dr. Patrick J. Michaels. The author—an associate professor in environmental sciences at the University of Virginia—shows that the warming of the earth over the last century has been far less than the doom merchants and agenda-toting politicians such as Al Gore would have us believe. Any warming has been a result of *natural climatic processes*, and is beneficial, and Michaels backs it up with facts. Distributed by the National Book Network; \$21.95 hardcover; \$11.95 for paperback. Contact the Cato Institute, (800) 767-1241.

MADE IN THE SHADE...

David E. Benner, professor of ornamental horticulture at Delaware Valley College, reveals his techniques and low-maintenance solutions for a shade garden and teaches, in a step-by-step video, how to create your own. The 45-minute video costs \$39.95 plus \$3 shipping. Contact Benner's Gardens, Inc., Star Route Box 86, New Hope, PA 18938; (800) 753-4660.

SPRAY ADJUVANTS...

Thomson Publications has released "A Guide to Agricultural Spray Adjuvants Used in the U.S." by Lori Thomson Harvey. In its fourth edition, this book contains most spray adjuvants plus 80 new products on the market. Chapters are on spreaders/stickers/buffers, penetrants, drift control agents, foam markets, soil wetting agents and much more. The book sells for \$17.50 plus tax. For ordering

information, contact Thomson Publications, P.O. Box 9335, Fresno, CA 93791; or phone (209) 435-2163; or fax (209) 435-8319.

TREES AND THE LAW...

"Arboriculture and the Law" by Victor D. Merullo and Michael J. Valentine is now available through the International Society of Arboriculture. It applies to the rights and duties of landowners, municipalities, commercial and consulting arborists and others involved in tree care. The appendices include a checklist and definitions of legal terms. To order, send \$45 (ISA non-member) or \$30 (ISA member) to ISA, P.O. Box GG, Savoy, IL 61874. Visa and MasterCard orders can be phoned to (217) 355-9516.

PHC SYSTEM...The ISA has also published "Plant Health Care Management System," a program to help arborists examine and re-think current methods and practices, and promote a proactive holistic approach to plant care that focuses on preventive maintenance. Price is \$40 for ISA members, \$55 for non-members. Send checks to ISA at P.O. Box GG, Savoy, IL 61874 or phone in Visa/MasterCard orders to (217) 355-9516.

LANDSCAPE COST DATA...

The 1993 edition of "Means Site Work & Landscape Cost Data" is now available to help landscapers plan, budget and estimate with 100 percent confidence. It contains a separate unit price section, plus 57 tables of assemblies costs with more than 3000 supporting line items. To order, send check or money order for \$79.95 plus 4.5% shipping and handling to: R.S. Means Co., P.O. Box 800, Kingston, MA 02364. To order by phone

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you. In the unlikely event that a loaner mower is unavailable, you can be assured of your ProLine dealer's quick turnaround service.

To introduce you to No Downtime, Toro is offering another great reason to visit your Toro ProLine showroom: No Payments, No Interest for 90 days on the purchase of a new Toro ProLine mower. Your ProLine dealer has a full line of mowers, including the exclusive Recycler® decks, to keep you in business day after day.

Visit your participating Toro ProLine dealer today to learn why there's never been a better time for No Downtime. But hurry—our 90 day, No Payments, No Interest program ends soon.

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Circle No.138 on Reader Inquiry Card

or for more information, call (800) 334-3509, or to fax an order, call (617) 585-7466.

PESTICIDE GUIDE...Gresham Trade Directories is offering a 1,000-page trade directory, "Federally Registered Pesticides," which lists 20,000 products, plus a manufacturer's

index. Cost is \$175 plus \$8 shipping and handling. Write Gresham Trade Directories, 942 Military St., Port Huron, MI 48060, or phone (313) 985-5028, or fax (313) 985-5190.

WAGES AND BENEFITS...The 1992 Associated Landscape Contractors of America wage

and benefit study is now available. It answers: How much will it take to hire a supervisor with a hort degree and five years' experience? What is the range of typical wages paid for similar talent in similar positions? What is the entry level wage for a salesperson with great potential but little or no

experience? Copies are \$25 each for ALCA members, \$45 for non-members. Order by mail: ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091. Order by phone: (703) 620-6363 or (800) 295-2522. Order by fax: (703) 620-6365.

GREEN INDUSTRY EVENTS

JANUARY

15-16: WinterGreen '93, Georgia International Convention & Trade Center, College Park, Ga. Phone: (706) 492-4664.

16: American Association of Nurserymen Tree Evaluation Seminar, Hyatt Regency Chicago (Ill.). Phone: (202) 789-2900.

17-19: Empire State Tree Conference, Suffern (N.Y.) Holiday Inn. Phone: (518) 783-1322.

18: Georgia Golf Course Superintendents Mechanics Seminar, Brookstone Golf & Country Club, Acworth, Ga. Phone: (706) 769-4076.

18-21: Eastern Pennsylvania Turf Conference & Trade Show, Valley Forge (Pa.) Convention Center. Phone: (814) 863-3475.

18-21: Virginia Turf & Landscape Conference and Trade Show, Richmond (Va.) Centre/Richmond Marriott. Phone (804) 340-3473.

19: Iowa Sports Turf Managers Association Meeting, Des Moines (Ia.) Convention Center. Phone: (515) 792-6433.

20: Bergen County (N.J.) Landscape Contractors Association Swap Meet, Shemin Nursery, Mahwah, N.J. Phone: (201) 934-0716.

20-23: National Tropical Foliage Short Course, Ft. Lauderdale (Fla.) Convention Center. Phone: (407) 886-1036.

21-23: Idaho Horticulture Convention & Trade Show, Boise (Ida.) Centre on the Grove. Phone: (800) 462-4769.

21-23: Tropical Plant Industry Exhibition (TPIE), Ft. Lauderdale (Fla.) Convention Center. Phone: (407) 345-8137.

21-23: Turfgrass Management/Park Maintenance Training School, Albany (N.Y.) Omni Hotel. Phone: (518) 463-1232.

25-28: Professional Horticulture Conference of Virginia, The Pavilion, Virginia Beach, Va. Phone (804) 523-4734.

25-29: Turfgrass Ecology and Management Short Course, Virginia Tech University, Blacksburg, Va. Phone: (703) 231-8000.

27: Good Crops², Winter Seminar and Mini-Trade Show, Sarasota (Fla.) Hyatt Hotel. Phone: (407) 345-8137.

27-28: California Association of Nurserymen Legislative Days, Sacramento, Calif. Phone: (800) 748-6214.

27-29: Wyoming Groundskeepers and Growers Association Conference & Trade Show, Casper (Wyo.) Events Center. Phone: (307) 637-7060 or (307) 265-1870.

28: Connecticut Tree Protective Association Annual Meeting, Aqua-Turf, Plantsville, Conn. Phone: (203) 257-8971.

28-29: Michigan Nursery & Landscape Association Planting Design School Course I, Holiday Inn South, Lansing, Mich. Phone: (517) 487-1282.

31-Feb. 3: Associated Landscape Contractors of America Executive Forum, Sheraton Tucson (Ariz.) El Conquistador Hotel. Phone: (703) 620-6363.

31-Feb. 2: The Fertilizer Institute Annual Meeting, New Orleans, La. Phone: (202) 675-8250.

FEBRUARY

1-5: National Golf Course Owners Association Annual Conference, Disney Yacht and Beach Club, Orlando, Fla. Phone: (803) 577-5239.

1-5: Louisiana Turfgrass Short Course, Burden Research Conference Center, Baton Rouge, La. Phone: (504) 388-2158.

3: Michigan Nursery & Landscape Association Wetland Restoration Seminar, East Lansing, Mich. Phone: (517) 487-1282.

3-4: Ohio State University Athletic

Field Short Course, Holiday Inn on the Lane, Columbus, Ohio. Phone: (614) 292-7457.

3-4: New England Grows, Hynes Convention Center, Boston, Mass. Phone: (617) 964-2366.

3-5: Mid-America Green Industry Convention, Hilton Plaza Inn, Kansas City, Mo. Phone: (816) 765-7616.

3-5: American Sod Producers Association Midwinter Conference & Exposition, Fairmont Hotel, New Orleans, La. Phone: (708) 705-9898.

4-7: National Landscape Association's Management Clinic, The Galt House East, Louisville, Ky. Phone: (202) 789-2900.

6-9: Chelsea America Flower Show, Rancho Palos Verdes, Calif. Phone: (310) 648-6602.

9: Target Specialty Products Annual Seminar & Exhibit, Mesa (Ariz.) Convention Center. Phone: (310) 865-9541.

9-10: Tree and Shrub Chemical Usage Seminar, Marion County Extension Office, Indianapolis, Ind. Phone: (317) 846-7020.

9-13: National Arborists Association Annual Meeting & Conference, St. Petersburg, Fla. Phone: (800) 733-2622.

10-11: Garden State Nursery & Landscape Conference and Trade Show, Garden State Convention & Exhibit Center, Somerset, N.J. Phone: (609) 737-0890.

11: Connecticut Turf & Landscape Conference, Hartford (Conn.) Civic Center. Phone: (203) 791-8615.

11-12: Target Specialty Products Annual Seminar & Exhibit, Sequoia Athletic Club, Buena Park, Calif. Phone: (310) 865-9541.

12-14: National Golf, Tennis & Resort Expo, D.C. Armory, Washington, D.C. Phone: (603) 536-4718.

15: Georgia Golf Course Superintendents Spray Technician Seminar, The Standard Club, Duluth, Ga. Phone: (706) 769-4076.

ASK THE EXPERT

DR. BALAKRISHNA RAO



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ASK THE EXPERT

DR. BALAKRISHNA RAO



More on draining wet wood

The following comments have been received from readers in response to Dr. Rao's answer concerning wet wood problems.

"As you can see from the following comments, the practice of installing drain tubes for wet wood is controversial," says Dr. Rao. "The statements are certainly valid, and—in theory, at least—drain tubes do not appear to be necessary or advisable.

"In practice, however, many arborists including myself have observed dramatic improvement in the condition of affected trees following drain tube installation, with no apparent adverse effects. Additional information and/or research is necessary to determine why some trees respond while others do not, and whether an alternative method could improve the condition of trees without the potential for causing more serious injury."

From James Burks, arborist consultant, Missouri: Although I enjoy and learn from reading your column, I must take issue with your advice in the May, 1992 issue.

In your answer, you recommended installing a drain tube into bacterial wet wood. While this practice was once commonly used, it has now fallen into disfavor and rightfully so.

To help relieve pressure within the tree requires precise knowledge as to location of the source of that build-up. Since we cannot see inside the tree, our "aim" is nothing more than an educated guess.

If the tube is installed "off target," it does no good. Further, drilling through the tree trunk breaks down the tree's natural defense boundary, thus allowing disease organisms a potential entry into healthy wood. In some cases (such as cabling), the negatives of breaking down CODIT walls may be justified; however, whatever benefits may occur due to the drainage tube installation (which have not been shown in the studies I am aware of) certainly do not argue for such treatment.

In my experience, most trees affected by bacterial wet wood are healthy despite the unsightly, sometimes malodorous ooze. In fact, according to Dr. Jim Feucht in Denver, some evidence supports the hypothesis that wet wood may actually lubricate tight branch crotches, thus helping prevent or minimize breakage.

My advice: do nothing.

From Jim Boron, Colorado: I am confused. It is my understanding that wet wood should never be treated by installing drain tubes.

I understand that wet wood is caused by bacteria that alters the wood inside the tree and in the process creates very moist conditions, high elemental concentrations, high pH and anaerobic conditions. Under these conditions, the affected wood is still relatively sound and is compartmentalized such that it does not further infect surrounding wood.

When holes are drilled and tubes installed into this zone, the infection is allowed entry into additional, unprotected portions of the tree, and is allowed access as well to the cambial region of

the hole's entry through the trunk. This cambial region is affected also, often causing cankers where there would be otherwise none.

Further, upon drying, the interior wet wood region becomes aerated, allowing decay-causing fungi to enter and begin a further deteriorating process not only in the original zone of wet wood, but along the path of hole entry. Upon decay, the interior wood is not nearly as strong as the original wet wood, and thus, the entire tree may become a hazard.

It is my understanding, then, that trees affected with wet wood should not be treated with drilled holes or with inserted drain tubes. If I should be wrong, please let me know. If the above information is found to be correct, then please let your readers know.

Improper treatment of our trees deserves no less.

Plants for black walnuts

Problem: What kinds of plants can be planted or grown within the root spread of black walnut trees? (Calif.)

Solution: The following information comes from a University of California publication.

The following trees have been reported to grow within the root spread of black walnut trees: Virginia pine, red cedar, hickory, black birch, American beech, white oaks, red oaks, black oaks, American elm, tulip tree, papaw, sassafras, sycamore, American crabapple, hawthorne, black cherry, honey locust, Canadian redbud, black locust, tree of heaven, staghorn sumac, sugar maple, red maple, Ohio buckeye, flowering dogwood, black gum and blackhaw viburnum.

The following shrubs and woody vines have been reported to grow within the root spread of black walnut trees: hazelnut, old man's beard (*Clematis virginiana*), American barberry, spice bush, wild hydrangea, black raspberry, blackberry, wild rose, smooth sumac, dwarf sumac, poison ivy, bitter-sweet, Virginia creeper, wild grape, St. John's-wort, maple-leaved viburnum and common elder.

For additional information:

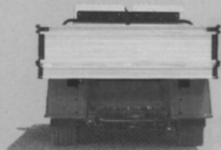
Brooks, Maurice G. 1951. *Effect of Black Walnut Trees and Their Products on Other Vegetation*. Bulletin 347, West Virginia University, Agricultural Experiment Station, Morgantown, W.Va.

Rietveld, W.J. 1983. *Allelopathic Effects of Juglone on Germination and Growth of Several Herbaceous and Woody Species*. *J. of Chemical Ecology*, 9(2): 295-308.

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

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

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at all times. A quick reality check tells us that's just not the case. We can help.

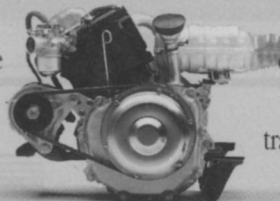
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seconds, giving you all the loading freedom of a flatbed. Or leave the sides on and fold down the tailgate. Or leave it all up. Or one side up and one side down. You get the idea. All conveniences aside, this is a lot more than a souped-up golf car. Here's proof: channel-over-tube frame design to support additional payload, stiffer coil springs and heavy-duty shocks for added durability, more dogs in the forward/reverse clutch and larger rear axle spline diameter for more reliable transmission, more rugged braking system for greater loads. And that's just a start. The heavy duty wrap-around, shock-mounted front steel bumper and Metton molded polymer front cowl give you extra protection against obstacles that might cross, or fall into, your path. And the frame-mounted trailer hitch lets you add even more haul to your Yamahauler. So, if you're looking for a utility vehicle you can truly utilize, go ahead and give us a call. We'll hook you up with a dealer who can get you better acquainted with the utility vehicle whose name says it all.



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PRODUCT SPOTLIGHT

New control fabrics promise end to weed, root miseries of landscapes

■ Kimberly-Clark's new Checkmate landscape fabric is called a "significant breakthrough," because of its three-layer construction.

Two outer layers are tear resistant and permeable, allowing air, water and nutrients to reach plants. The middle section is made of densely-packed fibers which act as a filtering mechanism.

Laminated together, the three layers create a more effective weed barrier that encourages nutrients to reach shrubs more efficiently than in all other non-woven or polyethylene weed control products,

Kimberly-Clark says. Checkmate can also be used as an underlay for walkways, in retaining walls to promote better drainage, on slopes to help prevent soil erosion, or anywhere weeds are a problem.

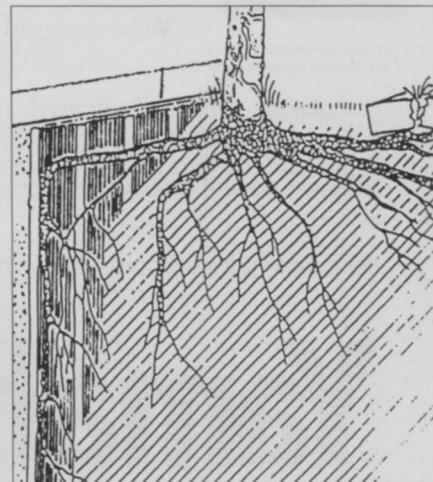
Checkmate is non-toxic, and the company says it conserves soil moisture and helps to moderate extreme temperatures.

Kimberly-Clark says the product is easy to use. It can be cut with ordinary scissors and fits over existing shrubs or in plant bed preparation. Checkmate is flexible, and conforms to any ground contours.

Circle No. 191 on Reader Inquiry Card

■ Vespro, Inc., of San Rafael, Calif. is the maker of Control A Root, a new root barrier that deflects tree roots away from hardscape.

Control A Root is made of extruded polyethylene and uses an "agonic curl," that



feeds and directs roots downward. According to Vespro, the curl helps to nurture and guide the roots downward. The panels are connected by slipping one panel into the channel of the other, eliminating the need for a fastening strip, and requiring less time for the landscaper.

Vespro says Control A Root will not crack after it is installed.

Circle No. 192 on Reader Inquiry Card



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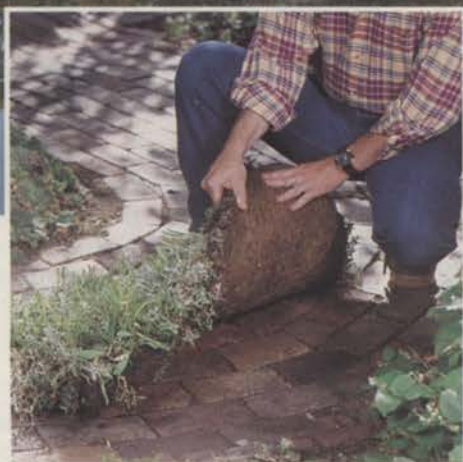
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WildFlower Carpet is grown under license and marketed by these quality growers: The King Ranch, Belle Glade, FL and Lexington, KY; Ward Lake Tree Farm, Lakewood, CO; Lake Mountain Turf Farm, Sandy, UT.

GREEN INDUSTRY SHOWCASE

Fungicide label extended to ornamental disease control

Under an expanded label recently accepted by the U.S. EPA, the broad-spectrum, multi-site disease control of ISK Biotech's Daconil 2787 flowable fungicide now extends to 55 damaging diseases on 78 species of broadleaf shrubs and trees—including conifers—as well as foliage plants and flowering plants and bulbs.

For turf applications, Daconil 2787 fungicide is now labeled for control of algal scum, as well as a broader range of the fungal pathogens that cause dollar spot, brown patch, leaf spot, melting-out, brown blight and other diseases.

Circle No. 193 on Reader Inquiry Card

New sweeper cleans up to 31,000 square feet per hour

Parker Sweeper is introducing the Parker 27 for quick and thorough clean-ups, indoors and outdoors.

Parker says the sweeper is ideal for



small yards, parks and parking lots.

The Parker 27 is portable, lightweight and, according to the company, sweeps five to seven times faster than manual sweeping and can clean up to 31,000 square feet per hour.

The Parker 27's broom pressure is infinitely variable, and the rotary side brush sweeps dust and dirt away from walls and corners.

The sweeper operates in forward and reverse directions, and picks up dust and small debris, such as cans, bottles, cigarettes and paper.

Circle No. 194 on Reader Inquiry Card

Color guide a new way to diagnose plant health

ColorBank is a horticultural diagnostic guide that uses green color bars to help rate the health of all exterior landscape plants under company care.



The 50-page fan-shaped guide includes a list of more than 250 common landscape plants with their individual healthy color rating and the appropriate green color bars for quick comparison with your specific plants. According to Eubank Consulting, the guide lets the expert keep track of plant "greenness" from one rating period to the next.

Circle No. 195 on Reader Inquiry Card

New tractor designed just for commercial service

Walker's new Model -T tractor is powered by a 20-hp Kohler Command V-Twin engine.

Designed especially for commercial ser-



vice, this model packs a powerful engine into a compact mid-size tractor to provide high productivity without sacrificing

maneuverability.

Walker says the Model-T has the same dimensions as other Walker riding mowers.

Walker is also introducing 48 - to 60-inch mowing decks for use with more powerful models, as well as an optional parking brake.

Circle No. 196 on Reader Inquiry Card

Turf herbicide recently registered for use in Arizona

Monsanto Company recently announced the registration of Dimension turf herbicide by the Arizona department of Agriculture for use in the state of Arizona.

Dimension is designed for use by golf course superintendents, lawn care operators and landscapers to control crabgrass and other problem weeds.

The active ingredient, dithiopyr, is the result of new chemistry developed by Monsanto. Features include low use rates and low soil mobility.

According to the company, Dimension binds tightly to the soil and has low potential for groundwater contamination or surface run-off.

Circle No. 197 on Reader Inquiry Card

New weapon in arborist arsenal against oak wilt

Alamo is a new systemic fungicide from Ciba-Geigy for control of oak wilt and Dutch elm disease.

Ciba-Geigy reports successful results after more than two years use in Texas against oak wilt, and the University of Minnesota has confirmed that Alamo is effective against both diseases in cooler climates.

The company also suggests::

- promptly remove infected trees;
- properly time tree pruning;
- dispose of firewood in affected areas.

If applied before symptoms appear, Alamo effectively prevents oak wilt and Dutch elm disease from damaging trees, and may also save some trees with as much as 30 percent crown loss.

Alamo must be injected into the tree's flare roots, just below the soil surface, with special equipment.

Circle No. 198 on Reader Inquiry Card

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 ADDRESS _____
 CITY _____
 STATE _____ ZIP _____

TELEPHONE (_____) _____

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102	119	136	153	170	187	204	221	238	255	272	289	306	323
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116	133	150	167	184	201	218	235	252	269	286	303	320	337
117	134	151	168	185	202	219	236	253	270	287	304	321	338

LANDSCAPE MANAGEMENT

JANUARY 1993
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1. BUSINESS & INDUSTRY

MY PRIMARY BUSINESS AT THIS LOCATION IS:
 (PLEASE MARK ONLY ONE IN EITHER A, B OR C)

A. Landscaping/Ground Care at one of the following types of facilities:

- 01 ☐ 0005 Golf courses
 02 ☐ 0010 Sports Complexes
 03 ☐ 0015 Parks
 04 ☐ 0025 Schools, colleges, & universities
 05 ☐ Other type of facility (please specify) _____

B. Contractors/Service Companies/Consultants:

- 06 ☐ 0105 Landscape contractors (installation & maintenance)
 07 ☐ 0110 Lawn care service companies
 08 ☐ 0112 Custom chemical applicators
 09 ☐ 0135 Extension agents/consultants for horticulture
 10 ☐ Other contractor or service (please specify) _____

C. Suppliers:

- 11 ☐ 0205 Sod growers
 12 ☐ Other supplier (specify) _____

Which of the following best describes your title:
 (mark only one)

- 13 ☐ 10 EXECUTIVE/ADMINISTRATOR
 14 ☐ 20 MANAGER/SUPERINTENDENT
 15 ☐ 30 GOVERNMENT OFFICIAL
 16 ☐ 40 SPECIALIST
 17 ☐ 50 OTHER TITLED AND NON-TITLED PERSONNEL (specify) _____

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Your Signature: _____

Date: _____

LANDSCAPE MANAGEMENT

JANUARY 1993
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LANDSCAPE MANAGEMENT each month: YES ☐ NO ☐

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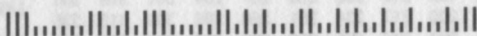
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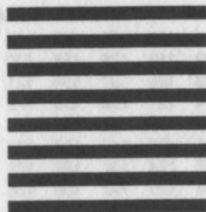
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For the Latest Developments in Biological, Organic and Natural Turf Care!

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Alternative turf care products can't be ignored. University research has determined them to be viable forms of insect, weed and disease control.

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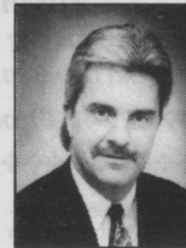
formed opinions of biological and organic products.

Some say biological and organic products are too expensive and take too long to show results. Others believe customers should have a choice. And still others are probably wondering what all the excitement's about.

Our job, as an industry information source, is not to tell you what to think, but to simply relay the information to you—as soon as we can and in the best way possible—and let you take it from there.

There are two sides to every story. Your opinions count, and we want to know what you think of

these products. Have you tried alternative products? If so, what were the results? To make *Bioturf News* the most useful news source it can be, we will always welcome your questions and comments.



Jon Miducki
Publisher



Terry McIver
Editor

Bioturf News will be a bi-monthly newsletter reporting on biological, organic and natural products for the specialty turf market. But you have to subscribe in order to receive it. To receive your free one-year subscription, please return the coupon below to:

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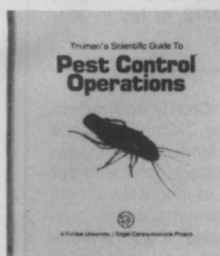
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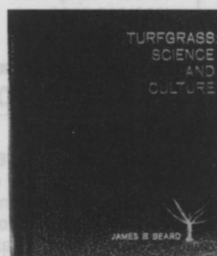
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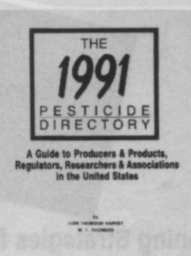
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
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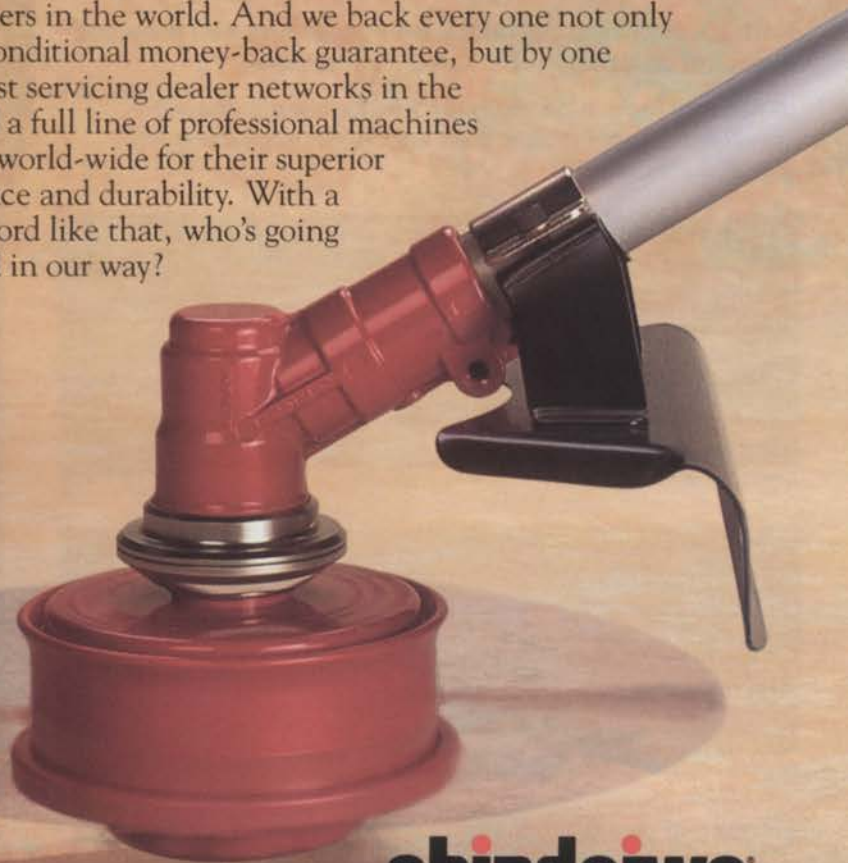
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RAM I

STILL TOUGH AND RELIABLE. UNDER ANY CONDITIONS.

Ram I, the proven Kentucky Bluegrass that still provides excellent color and top overall performance.

In national trials under both low and high maintenance conditions, Ram I ranked third and fourth respectively in overall turf quality.

Mean Turfgrass Quality Ratings of Kentucky Bluegrass Cultivars for Each Month Grown Under **High Maintenance** at Seventeen Locations in the U.S. & Canada 1991 Data

Turfgrass Quality Ratings 1-9; 9=Ideal Turf: Months 1/

NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
Midnight	5.3	5.7	5.2	5.2	6.4	6.4	6.3	6.3	6.3	6.6	5.9	5.0	6.2
Unique	6.3	6.7	6.3	5.6	6.2	6.3	6.4	6.3	6.4	6.5	5.5	5.2	6.2
Glade	3.0	3.8	5.1	5.5	6.1	5.9	6.0	5.8	6.4	6.6	5.7	4.7	6.2
RAM-I	4.7	4.7	5.3	5.5	5.8	5.8	5.9	5.7	6.3	6.5	5.9	5.5	6.1

Under high maintenance, Ram I ranked fourth out of 125 entries.

Mean Turfgrass Quality Ratings of Kentucky Bluegrass Cultivars for Each Month Grown Under **Low Maintenance** at Sixteen Locations in the U.S. 1991 Data

Turfgrass Quality Ratings 1-9; 9=Ideal Turf: Months 1/

NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
Midnight	5.3	4.7	6.0	4.8	6.7	5.7	5.3	5.6	6.5	5.7	5.6	6.0	5.7
Barnax	6.3	5.0	6.0	6.1	6.8	5.8	5.0	4.9	5.5	5.0	4.9	5.0	5.7
RAM-I	5.3	5.3	4.0	5.1	6.4	5.7	5.1	4.9	5.3	5.6	5.3	4.3	5.5

Under low maintenance, Ram I ranked third out of 62 entries.

So whether you're producing sod that will become someone's well-manicured lawn or seeding a low-maintenance area, count on a proven reliable...Ram I.



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Lofts Seed Inc.

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