

NOVEMBER 1994 • \$4.00

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## STATE OF THE LAWN CARE INDUSTRY


*Also: Are you a good leader?*

*LM Reports: skid-steer loaders*

*Communicating with non-English workers*

*Time management*





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## AS WE SEE IT

RON HALL, SENIOR EDITOR



### Even from the Arch, Gateway landscape looks like a winner

Going to the top of the Gateway Arch is almost a must for anybody attending the Green Industry Expo in St. Louis.

You climb into this small, white, egg-shaped compartment. It's rimmed with five plastic seats bolted to the wall in, approximately, a semi-circle. You're packed so tightly that everyone's knees form a ring in the center of the pod.

Want to know what the compartment looks like? Remember the "egg" that transported Mork (Robin Williams) to earth in "Mork and Mindy"? Only slightly larger.

National Park Service employees direct the loading of visitors into maybe a dozen of these curious conveyances at a time. When they begin ratcheting their way to the top of the Arch, it doesn't take a lot of imagination to picture them as a string of pearls being dragged through a slightly larger pipe. This is the biggest rainbow-shaped chunk of stainless steel pipe you're ever going to pass through.

There's no other way for you to get to the top. You certainly wouldn't want to climb the zig-zagging steps, glimpses of which you see out the small window of your egg as it rises to the top. For me anyway, the climb would be terrifying, assuming I didn't keel over from exhaustion first.

You're 630 feet above St. Louis, and sometimes above the clouds. Gingerly you walk to the small rectangular windows. Look east and the Mississippi River appears no larger than a muddy creek; look west and the city spreads in all directions.

Unless you're more than moderately frightened of high places—go up in the Arch!

Since I've already paid my \$5 and ridden the egg, I'll confine further explorations to the grounds there.

Earlier this fall I walked the grounds in the Arch's huge shadow. Maybe it was the balmy sunshine of a perfect early autumn

day. Or the hamburger, beer and friendly conversation I'd just had in Dooley's Pub. I was feeling as right as a person can feel.

St. Louis had cooled, and the previous week's rain commanded the turfgrass to stand straight and fresh. Rows of ash trees, their leaves getting the first hints of golden color, framed the dark green vista which opened to the Arch. Under the cloudless sky, it sent reflected sunlight dancing in every direction.

Several top landscape business owners in St. Louis told me to telephone and visit Jim Jacobs at the Arch. They described him as an excellent grounds superintendent and a fine person too.

When I returned to Cleveland I telephoned him. That's one reason why I'm eager to return to St. Louis for the 1994 Green Industry Expo. Jacobs says he'll show me around the grounds at the Gateway Arch while I'm there.

Jim and I probably won't be walking the grounds. We'll probably ride in a utility vehicle or something. Jim damaged ligaments and muscles in his leg playing soccer two months ago. He was on the team with the other parents and coaches versus the kids.

"I probably tripped over the ball. I had so many kids on top of me I really don't know what happened," he says over the telephone.

Jim tells me his crew takes care of just over 47 acres of turfgrass and 2650 trees.

I'm also looking forward to learning more about "The Flood" of 1993. The Mississippi River filled the railroad tunnels almost at the Gateway Arch's base.

Ron Hall

# LANDSCAPE MANAGEMENT

**'WE KNOW YOUR TURF'**

NOVEMBER 1994 VOL. 33, NO. 11

## COVER FEATURE

### 8 Lawn care growth: 5.2%

The lawn care industry continued to show slow, steady growth in 1994. While not as fast as the industry's growth in the late 1970s and early 1980s, it remains impressive.

*Jerry Roche*

## FEATURES

### 11 Language barriers

As the country's workforce changes, supervisors must more frequently communicate with employees who do not speak English easily. The key is mutual respect, enthusiasm and effort—on the part of both the employee and the supervisor.

### 12 Leadership qualities

Even if you're not a natural-born leader, you can become one, according to Jim Perrone. Gaining 'four-star buy-ins' from employees means being enthusiastic, empathetic and more.

*Jerry Roche*

### 12 Time management

Wasted time equals lost opportunity. Lost opportunity means lost profits. Here are some suggestions on how to maximize your 'minute management.'

### 14 Winterizing sprayers

Doing so can save costly delays from downtime during the next business season.



### 16 Winterizing irrigation

The items needing the highest maintenance on irrigation systems are the pump station, water source, lighting protection, automatic controls and turf rotors.

*Bob Scott*

## GOLF & ATHLETIC TURF

### 1G Environmental considerations

From design to management, Ballantrae Golf and Yacht Club integrates philosophies that keep the surrounding grass, water and air healthy.

*Ed Etchells, Sharon B. Rinehimer*

### 4G Winter golf

Dormant bentgrass doesn't like heavy traffic. Keep an eye on temperature swings, apply extra topdressing, and use temporary greens if possible.

*Terry McIver*

### 8G Rebuilding the fields

Rich Moffitt's in-house staff at St. Louis University makes its ballfields and campus a colorful oasis. When he started rebuilding the baseball field, he didn't know where to start.

*Ron Hall*

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One of the most expensive—yet most economical—forms of landscape equipment is the skid-steer loader. Because of its power and versatility, you can save 'loads' of labor costs by buying a good one.

*Jerry Roche*

## TECH CENTER

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Though they come in all shapes and sizes—from sand to superabsorbent polymers, each has specific functions. Here's a long list of such products.

*Jerry Roche*



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Using nematodes on lawns will not harm beneficial insects, according to Dr. David J. Shetlar of Ohio State University.

*James E. Guyette*

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Landscape contractors from New York towns and villages in and around Westchester County are protesting increased restrictions on leaf blowers.

*Terry McIver*

## 36 More on certification

The title Certified Turfgrass Professional (CTP) comes with the completion of a special course through the University of Georgia. It's for LCOs, landscapers, golf course supers and athletic field/park managers. And it meets pesticide recertification requirements in 25 states.

*Ron Hall*

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**ON THE COVER:** This healthy, green home lawn is maintained nicely by TruGreen/ChemLawn.

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# ASK THE EXPERT

DR. BALAKRISHNA RAO



## New grub control product

**Problem:** We learned recently that there is a new insecticide called Merit for white grub control. How good is this chemical? We would appreciate your comments. (New York)

**Solution:** The insecticide Merit 75 WSP is made by Miles, Inc. The Environmental Protection Agency recently approved registration of Merit 75 WSP for turf and ornamental use in all of the United States, except California and New York where the label is pending.

Merit is a broad spectrum systemic that consists of a new active ingredient called imidacloprid. This product works on an insect's nervous system, resulting in death.

The product is reportedly effective at low rates (0.3 lb. ai/acre) and helps manage insect pests by ingestion and contact. It has a CAUTION signal word.

Merit 75 WSP is labeled for use on residential and commercial turfgrass, golf courses, cemeteries, parks, playgrounds and athletic fields. It is labeled to manage white grubs, billbugs and annual bluegrass weevils in turfgrass.

Merit is available as 75 WSP product in one-quart-per-acre packets sealed in foil pouches. A granular formulation and an insecticide/fertilizer combination should be available in the future.

In your area, particularly in sandy soils, European chafers would be the primary white grub. You may also find other white grubs such as Japanese beetles and northern masked chafers. According to Miles, an average of 95 to 98 percent control of these white grubs can be achieved.

To improve treatment efficacy, you must water the area after treatment. Thatch in excess of ½-inch should be managed for better movement of the product.

Miles representatives have indicated that an application made on the first of April should be sufficient to manage the grub problem until October. Treatments made from the first of April through mid-August can be expected to achieve more than 85 percent control. However, for 95 to 98 percent control, they suggest applying it during May to July.

In states where Merit is registered, read and follow label specifications for best results.

## Galls on spruce trees?

**Problem:** We have had poor results controlling the galls which form at the base of small spruce branches. We have used Sevin insecticide in the past around late July and early August, and haven't had good luck. When is the best time to control this pest, and what do I use? (Michigan)

**Solution:** Spruce trees get two different types of galls caused by tiny insects called adelgids. Though commonly referred to as spruce gall aphids, they are not true aphids.

It is important to identify the type of adelgid to provide proper treatment at the proper time.

The Cooley spruce gall adelgid produces galls about 2 inches long by ½-inch wide at the tips of twigs. To manage this problem, treatments should be made after the galls open in late July or early August, or before buds start to break in the spring (about early April).

Another kind of gall is called Eastern spruce gall adelgid. The galls are about one inch in diameter. This insect produces galls at the base of small branches. It has a slightly different activity period, which may explain why you have had problems in managing these galls. To manage Eastern spruce gall adelgids, treat the plants after galls open in middle to late September or before buds start to break in spring.

For both types of gall problems, insecticides such as Dursban or Sevin can be used in the spring. After you identify the type of gall insect you are dealing with, monitor the galls for their opening time. Make sure to apply at the proper time when galls open. Timing is one of the most important factors in many pest management approaches.

Read and follow label specifications for best results.

## Damage from horticultural oils

**Problem:** We have used horticultural oil in the fall and one year we had severe injury on a number of plants such as spruce, yews and pines. It happened only at a certain time of the season. We have used the same oil on other plants, at later dates, without any problem. (Michigan)

**Solution:** In recent years, the horticultural oils have become highly refined and should not present a serious problem, if used according to label specification. Read the label, learn which plants are sensitive to oils, and avoid treating them.

Other possible causes of the injuries: temperature extremes, low soil moisture, high pressure while treating (blasting), sensitive plants, hot mix in the hose not recirculated into the tank prior to treating, and improper mixing.

Reports indicate that another important factor is the plant tissue hardening at the time of oil application. Plant tissues are sensitive to oil injury in late fall. Experts believe that when we get 48 hours of cumulative freezing temperatures, it is somewhat safe to apply oil treatments.

---

*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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# Lawn care industry grows 5.2% in second year of Clinton administration

**Ten percent of top companies do 57% of the business, but small businesses (under \$1 million annual revenues) growing at a 15% clip.**

■ What LANDSCAPE MANAGEMENT magazine defines as the "lawn care industry" continued to show slow, steady growth in 1994, the second year of the Bill Clinton administration. While not as fast as the industry's growth in the late 1970s and early 1980s, it remains impressive.

Revenues attributed to lawn care sales by

LM readers grew from \$2.50 billion in 1993 to \$2.63 billion in 1994. Most of the growth this year came from increased fertilizer and chemical applications to residential lawns, contrasted to last year's growth in mowing/maintenance services, the survey notes.

The survey is based on 201 responses to 966 questionnaires mailed to a cross-section of the 7,366 LM readers who classify themselves as "lawn care companies."

Revenues in the lawn care industry from mowing/maintenance operations declined slightly from \$800 million to \$750 million. But that was more than offset by revenues from fertilizer and chemical applications ("chemical lawn care"), which grew to \$1.88 billion from \$1.70 billion.



## THE LAWN CARE INDUSTRY; WHERE ARE THE REVENUES?

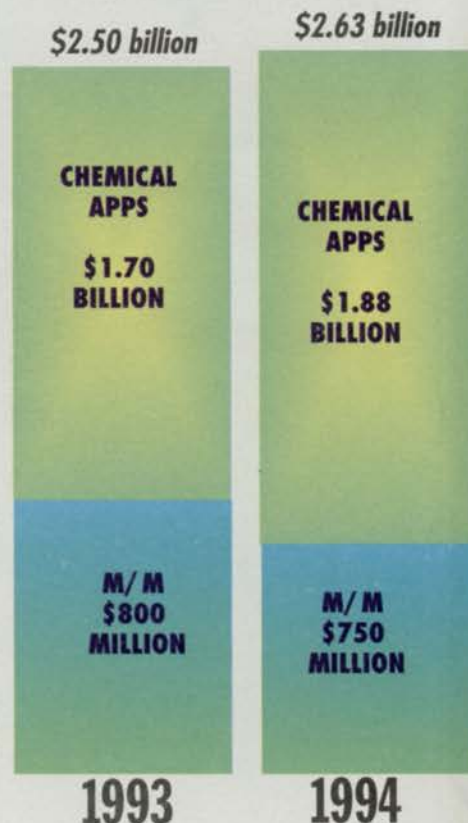
### CHEMICAL LAWN CARE

Company revenues	Total companies	Total Industry revenues
\$0	1878	\$0
\$1-\$49,999	2026	\$50.6M
\$50,000-\$99,999	1105	\$82.9 M
\$100,000-\$199,999	479	\$71.8M
\$200,000-\$499,999	847	\$296.5M
\$500,000-\$999,999	405	\$303.7M
\$1,000,000 or more	350	\$1,073.6M
		<b>\$1.88 BILLION</b>

### MOWING/MAINTENANCE

Company revenues	Total companies	Total Industry revenues
\$0	2320	\$0
\$1-\$49,999	2099	\$52.5M
\$50,000-\$99,999	1436	\$107.7 M
\$100,000-\$199,999	663	\$99.5M
\$200,000-\$499,999	515	\$180.3M
\$500,000-\$999,999	184	\$138.0M
\$1,000,000 or more	147	\$176.4M
		<b>\$0.75 BILLION</b>

## TOTAL LAWN CARE INDUSTRY REVENUES







Most surprising was a growth in the application of fertilizer/herbicide combinations. According to the 1993 survey, LM lawn care readers purchased \$20.8 million worth of such products; in 1994, purchases mushroomed to \$91.9 million. Accordingly (and not surprisingly), purchases of straight fertilizers declined from \$135.8 million to \$99.6 million.

Overall, the "buying power" of LM's lawn care readers increased by 15.5 percent from 1993 to 1994. Last season, they bought

almost \$390 million worth of fertilizers, pesticides, maintenance equipment, turfseed and sod. This season, they purchased almost \$450 million in the same product categories.

Purchases of pre- and post-emergence herbicides, turf insecticides and turf fungicides also showed strong gains: \$82.7 million total in 1993 compared to \$117.7 million total in 1994.

The backbone of the industry remains

*continued on page 10*

## PURCHASING POWER OF LM'S LAWN CARE READERS

PRODUCT CATEGORY	% OF SAMPLE, '94	% OF SAMPLE, '93	MEDIAN DOLLARS	MEAN DOLLARS	PROJECTED TO CIRC. '93	PROJECTED TO CIRC. '94	CHANGE '93 TO '94
Soil aerators	28.1	—	\$2,000	\$1,304	—	\$2,699,500	—
Fert./herb. combos	57.3	31.3	\$3,750	\$21,776	\$20,845,000	\$91,915,000	+
Domestic pick-ups	48.3	51.6	\$14,000	\$17,463	\$65,748,500	\$62,132,500	-
Dry-app. fertilizer	69.7	84.9	\$3,000	\$14,183	\$92,486,500	\$72,817,500	-
Ornamental fert.	42.1	43.2	\$1,000	\$2,965	\$8,613,500	\$9,194,500	+
Liquid-app. fertilizer	27.0	34.9	\$6,000	\$13,496	\$43,255,500	\$26,844,500	-
Post-emerg. herbicides	59.6	62.5	\$1,500	\$5,877	\$23,269,000	\$25,799,000	+
Pre-emerg. herbicides	59.6	63.5	\$2,000	\$7,201	\$21,420,500	\$31,613,000	+
Small mowers	25.3	26.6	\$2,350	\$2,142	\$6,297,000	\$3,992,500	-
Mid-size mowers	25.8	21.4	\$3,650	\$5,211	\$9,264,000	\$9,900,000	+
Large mowers	16.3	15.1	\$5,000	\$7,931	\$9,170,500	\$9,525,000	+
Turfgrass Sod	21.3	26.6	\$1,000	\$2,421	\$5,246,500	\$3,798,500	-
Irrigation/sprinklers	15.2	21.4	\$3,250	\$10,615	\$18,337,500	\$11,889,500	-
Compact tractors	15.2	17.2	\$8,000	\$12,655	\$10,385,000	\$14,174,000	+
Turf fungicides	43.3	36.6	\$900	\$5,188	\$10,957,000	\$16,545,500	+
Turf insecticides	46.1	58.3	\$2,000	\$12,898	\$27,058,000	\$43,800,000	+
Turfseed	59.0	57.3	\$1,000	\$3255	\$15,478,500	\$14,144,500	-
<b>TOTALS</b>					<b>\$387.9 million</b>	<b>\$447.9 million</b>	<b>+15.5%</b>



continued from page 9

the small, independent operator. The statistics show that independent operators outnumber branches and franchisees by about seven to one. Branches amount to just 5.5 percent of LM's lawn care readership and franchisors/franchisees are 7.5 percent. According to our extrapolations, companies with annual revenues of less than \$1 million (which account for 90 percent of the companies in the industry) account for 43 percent of total industry revenues. Taking the extrapolations a bit further, the survey identifies about 350 companies in the U.S. with revenues of at least \$1 million.

Though overall industry growth was 5.2 percent from 1993 to 1994, the average company reported growth of 14.7 percent. (This portion of the survey was not weighted to company size.) Eighty-seven percent of the companies noted positive growth in 1994. Moreover, 93 percent predict positive growth in 1995, an average of 15.8 percent per company.

The statistics also show some indication that independent lawn care operators are finally breaking with tradition and actually raising prices, even in light of an increasing number of low-priced competitors.

Forty-five percent of the respondents to the survey said they raised prices in 1994. Of those LCOs who have decided on 1995 prices, 69 percent will raise them. But since 29.4 percent are still undecided, the number of companies that raise prices in 1995 could be as low as 48.7 percent (still greater than the 1994 figure) and as high as 78.5 percent.

Almost 87 percent of the respondents to the survey were involved in chemical lawn care. The average company's revenues from chemical lawn care were 38.5 percent of total revenues in 1994. Thirty-two percent of the respondents perform chemical lawn care only.

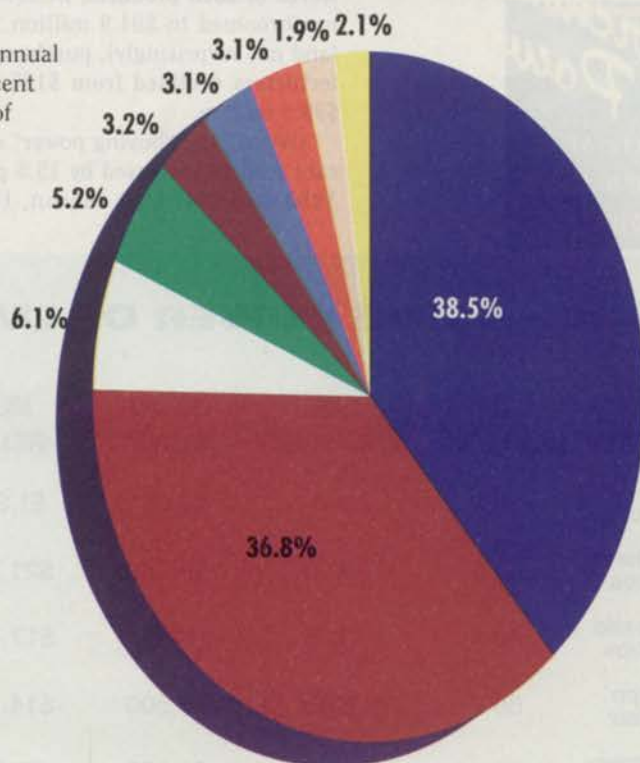
Three of four respondents perform some mechanical maintenance (mowing, aeration, trimming, etc.). The average company's revenues from mowing in 1994 were 36.8 percent of total revenues. One in four companies does not apply chemicals or fertilizers.

Other revenues come from ornamental installation and care, tree care, sodding/seeding/reseeding, aeration, snow removal, and dethatching/renovation. Some isolated companies even offer irrigation services, reel grinding, golf construction, liming, pasture weed control, structural pest control and Integrated Pest Management (IPM) services.

Not surprisingly, 59.8 percent of the respondents remain optimistic about the industry and 32.8 percent consider their feelings "neutral." Only 7.4 percent of the respondents claim to be pessimistic about the industry's outlook.

—Jerry Roche

## REVENUES DERIVED FROM SERVICES PERFORMED



- 1 CHEMICAL LAWN CARE
- 2 MOWING
- 3 ORNAMENTAL INSTALLATION & CARE
- 4 TREE CARE
- 5 SODDING, SEEDING AND RESEEDING
- 6 AERATION
- 7 SNOW REMOVAL
- 8 DETHATCHING, RENOVATION
- 9 "OTHER" (IRRIGATION, LEAF CLEAN-UP, REEL GRINDING, GENERAL LANDSCAPING, LANDSCAPE INSTALLATION, I.P.M., GOLF CONSTRUCTION, LIMING, PASTURE WEED CONTROL, STRUCTURAL PEST CONTROL)

### LM "STATE OF THE INDUSTRY" SCHEDULE

December . . . . . Athletic Fields  
January . . . . . Landscaping  
February . . . . . Golf Courses



# Supervising across



## language barriers

**The key to communication is mutual respect, enthusiasm and effort—on the part of both the employee and the supervisor.**

■ As the country's workforce changes, supervisors must more frequently communicate with employees who do not speak English easily.

That challenge can be frustrating, but not impossible. In her book "Bridging Cultural Barriers for Corporate Success," Sondra Thiederman offers practical ideas for improving communication with workers whose English is limited.

Using her tips, supervisors can identify where communication bridges need to be built, understand how to build them, and help "ESL employees" (English/Second Language) better communicate.

The majority of non-native English speakers want to succeed, the author says, and are intelligent and hard-working enough to do so. But English is a complex

language, and many ESL workers are intimidated by its difficulty. When people cannot make themselves easily understood, they may quickly begin to feel inadequate and powerless.

A patient, thoughtful supervisor can help prevent or relieve such feelings. ESL workers invariably want to express themselves clearly and be fully understood as much as anyone. They also want to understand their supervisor.

You can help ESL workers, Thiederman says, by using simple words and sentence structure. Other suggestions:

- Stick to one subject at a time.
- Be concrete and ask specifically for what is wanted.
- Avoid jargon.
- Phrase statements positively.
- Use active rather than passive voice.
- Speak slowly and distinctly. Enunciate clearly.
- Keep the tone calm and respectful.

Visual aids can give the worker more ways to understand. Written words, pictures, charts and diagrams are all good bridge-builders. Writing down instructions or key ideas from meetings and phone calls

gives ESL employees a better chance to grasp information.

Occasionally, ESL employees may indicate they understand when they don't. They don't want to look foolish, or imply that the supervisor didn't explain well enough. They may also worry that, even if things are explained again, they still will not understand.

One way to know if employees really understand is if their eyes are focused on you and they nod and smile appropriately. A sign of not understanding is if there are no interruptions or questions, or if they smile or giggle inappropriately. (Such laughter rarely means disrespect; more frequently, it indicates embarrassment.)

Workers should be asked to repeat instructions in their own words. Ask them to demonstrate their understanding, and follow up by observing their behavior.

Invite all employees to ask questions in private, to spare some employees from losing face in public. Also, allow enough time for them to formulate their questions.

Here are some additional tips on helping ESL employees get their point across:

1) Share responsibility for poor communication. Say something like "I'm sorry it's taking me so long to understand."

2) Listen to the whole statement before deciding whether you understand.

3) Repeat what the worker said in your own words and ask if you have heard correctly.

4) If you are not communicating well, encourage ESL workers to write messages down or to spell difficult words.

5) Watch the speaker's lips. Observe body language.

Don't be afraid to learn a few words of their language. And when you speak, don't worry about making mistakes. You'll be giving the ESL employee the chance to teach you something.

Finally, encourage ESL employees to speak English. Smile and look enthusiastic when speaking. If they seem embarrassed at their difficulties, look away for a moment to let them gather composure. Challenge them to express themselves beyond "yes" and "no." Even if they laugh at their own mistakes, don't laugh at them.

—Adapted from the University of California's Agricultural Personnel Management Program newsletter, Labor Management Decisions, summer, 1992 issue.



# TIME MANAGEMENT: MAKE THE MOST OF EVERY MINUTE

**Wasted time equals lost opportunity. Lost opportunity means lost profits.**

■ Time, and how to manage it are crucial to your success. The adage, "time is money," is especially true in the landscape industry.

Here are some suggestions on how to maximize your "minute management:"

**1) Limit your availability.** Unexpected and unplanned interruptions and distractions can steal your day. Too much time away from the "main thing" has a negative impact on your business productivity and profitability.

**2) Concentrate your phone calls.** Try to devote a certain time of the day both to return and originate phone calls. Prior to each call, jot down the points you want to cover, and take notes during conversations.

**3) Protect your "magic" minutes.** Knowing when you operate at peak performance allows you to devote certain activi-

ties to certain times of the day.

**4) Be aware of time.** Start by keeping a stopwatch with you. After a while, your internal clock will take over.

**5) Establish a common format** for similar pieces of correspondence. However, always ensure that letters are personalized and signed.

**6) Confirm appointments.** Never assume a meeting is on. A simple phone call saves time and energy.

**7) Don't be stuck in traffic.** Invest in a cellular car phone. Let a customer or prospect know you're on the way or will be a few minutes late. You can also check messages and return important phone calls.

**8) Plan your day the night before.** Try to divide your daily activities by type.

**9) Allow time for each activity.** Plan how long each item on your daily to-do lists will take. This helps you keep track of whether you're on schedule or running behind.

**10) Reduction leads to completion.**

Look at a major project in bite-size chunks. Plan what can be completed daily and weekly. It will reduce anxiety and keep quality and workmanship high.

**11) Don't get buried by paper.** Try to touch each piece of paper only once, and file it, act on it, or throw it away. If you haven't touched it in six months, you probably never will.

**12) Set priorities.** Rank duties from most important to least important.



## The qualities of LEADERSHIP

**Gaining 'four-star buy-ins' from employees means being enthusiastic, empathetic and more.**

■ Even if you're not a natural-born leader, you can become one, according to Jim Perrone of Perrone-Ambrose Associates, Chicago, Ill.

Perrone, speaking at the Midwest Grounds Management Conference this summer, asked the audience what they thought employees want and expect most from their leaders. Here are the responses:

● integrity/trust/confidence,

- two-way communication,
- a sense of direction/vision,
- positive mental attitude,
- technical competence, and
- sincerity.

All supervisors are not leaders, Perrone said. He also noted that "we want to move away from the idea that a leader is superior. He or she just has a different area of responsibility."





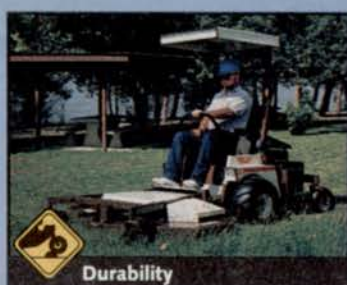
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Outfront Reachability



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Circle No. 106 on Reader Inquiry Card



Studies by American University and the University of California at Berkeley both revealed that leaders are visionary, Perrone said. "They have an agenda, and know where they're going."

"But what I don't see often enough is the ability to pass that vision on with a sense of urgency. This unleashes the ability of everyone else in the organization to connect their visions in."

Perrone says leaders can get employees to "invest their hearts, to get them on board, heart and soul."

"Leadership is making people *want* to do what they *have* to."

Likewise, he says, a vision is more than an idea, it's a force in the heart. Employees can "buy in" to the vision at four different levels:

## LEADERSHIP GUIDELINES

- 1) **Have an agenda; know where you're going.**
- 2) **Be honest, predictable and consistent.**
- 3) **Be trustworthy and exhibit integrity.**
- 4) **Show empathy, understand what people are struggling with.**
- 5) **Be enthusiastic.**

★★★★ **Four-star buy-in** is a full commitment where the employee says "get out of my way."

★★★ **Three-star buy-in** is the employee who is "on board," a good soldier.

★★ **Two-star buy-in** is what Perrone calls "formal compliance."

★ **One-star buy-in** is what Perrone says is "grudging compliance" where the em-

ployee will do what he or she has to in order to keep the job.

Many employees are two-star and some are one-star. But leaders strive to get as many employees as possible into the three- and four-star categories. And one of the ways to do so is to be trustworthy and exhibit integrity.

"You've got to be honest, predictable and consistent," Perrone notes. "We pass on our vision by how we live. We must walk the

talk."

Opening the lines of two-way communication—what he terms "interpersonal competence"—means that the leader involves people in the process of leading. Employees expect leaders to be congruent and honest, to deliver information in a constructive (not destructive) way, and to get to know and value them as individuals.

"Show empathy, understand what people are struggling with," Perrone says.

Finally, "if you have no enthusiasm, it's going to be hard to be a leader."

Perrone, an expert in organizational human relations, is founder and managing partner of the nationally-recognized Perrone-Ambrose Associates. The Perrone-Ambrose approach to leadership is used at companies such as Environmental Industries, Xerox, Sandoz, Blue Cross/Blue Shield and ESPN.

The Midwest Grounds Management Conference, held at Illinois State University in Normal, was co-sponsored by the Professional Grounds Management Society and the Midwest Association of Higher Education of Facilities Officers.

—Jerry Roche

## Be prepared! ...Winterize sprayers now

■ Now that cold weather has begun, don't forget to winterize your sprayer before storing it for the season. This can save costly delays from equipment breakdowns during the next business season. Applicators who practice preventive maintenance can improve sprayer performance.

A good cleaning with a cleaning/neutralizing solution is essential, says Tom Williams, University of Delaware cooperative extension agricultural engineer. The solution used depends on the pesticides to be removed from the sprayer. Check pesticide labels for specific cleaning instructions.

In most cases, Williams says, ¼ pound of laundry detergent in 25 gallons of water will do an adequate cleaning job. One quart of household ammonia per 25 gallons of water will help neutralize salt or amine formulations of herbicides. Leave the ammonia solution in the sprayer for at least six hours.

Choose the cleaning site carefully to avoid contaminating water supplies. You should have a chemical rinse pad some-



where on the premises. If you don't, the Delaware cooperative extension recommends that you stay 100 feet away from any well. They also say you shouldn't dump rinse water or cleaning solution in one spot. Instead, spray the solution on a field where it won't harm plants or animals.

"Wear appropriate protective clothing when cleaning the sprayer to prevent exposure to pesticides," Williams cautions. "As a minimum, wear rubber gloves, boots and apron to protect hands, shoes and

clothes. Also, wear splash-proof goggles for eye protection."

● Start cleaning by rinsing the inside of the tank with clean water. Spray the rinse water through the nozzles. Do this twice before mixing the cleaning/neutralizing solution. Agitate and spray out the cleaning solution. Then rinse again with clean water.

● Remove the nozzle tips, screens and ball check valves. Clean them in a strong detergent solution with a soft bristle brush. They can then be stored in kerosene over the winter.

● Check for leaks, corrosion and worn-out parts and make the necessary repairs. "Loosening or removing diaphragms in the check valves for storage helps ensure a solid seal for next year," Williams says.

● Finally, take steps to protect the sprayer unit from potential freeze damage. Add enough antifreeze with rust inhibitor to fill the pump and control valves. Circulate the antifreeze to protect all parts.

Next spring, drain the antifreeze from the sprayer and save it for future winter storage use. Clearly label it as contaminated and only for sprayer use. Then store the antifreeze with pesticide supplies over the summer.



# The Andersons Leads The Nation In Providing DowElanco Products For Professional Turf Care Markets

The Andersons, manufacturers of TeeTime® turf care products for golf course superintendents and Andersons Professional Turf® products for lawn care operators and other groundskeepers, is now a leading provider of high-quality/high-performance DowElanco product formulations.

Having forged their business relationship over a time span in excess of 20 years, The Andersons has incorporated a broad range of DowElanco products to prevent or solve specific turf care problems. High-quality products have also been developed for use on ornamentals.

The following chart provides a basic product offering guide but The Andersons is quick to point out that their technical capabilities for custom blending other formulations are virtually limitless in their state-of-the-art turf care products plant. Fully detailed product information is available.

## Fertilizers & DowElanco

Fertilizer with 0.47% Dursban  
 Fertilizer with 0.52% Dursban  
 Fertilizer with 0.65% Dursban  
 Fertilizer with 0.71% Dursban  
 Fertilizer with 0.92% Dursban  
 Fertilizer with 0.75% Surflan  
 Fertilizer with 1.00% Surflan  
 Fertilizer with 0.57% Team & 0.57% Dursban  
 Fertilizer with 0.87% Team & 0.58% Dursban  
 Fertilizer with 1.15% Team & 0.57% Dursban  
 Fertilizer with 0.57% Team  
 Fertilizer with 0.87% Team  
 Fertilizer with 0.92% Team  
 Fertilizer with 1.00% Team  
 Fertilizer with 1.15% Team  
 Fertilizer with 1.25% Team  
 Fertilizer with 1.50% Team  
 Fertilizer with 1.54% Team  
 Fertilizer with 0.92% Balan  
 Fertilizer with 1.02% Balan  
 Fertilizer with 1.04% Balan  
 Fertilizer with 1.15% Balan  
 Fertilizer with 1.28% Balan  
 Fertilizer with 0.46% Balan & 0.92% Dursban  
 Fertilizer with 0.86% Balan & 0.86% Surflan  
 Fertilizer with 0.57% Balan & 0.57% Surflan  
 Fertilizer with 0.38% Gallery

## Fungicides

Cutlass 50W\* 4x8 oz.  
 Rubigan AS\* 2x0.5 gal.

## Herbicides

Treflan Granular 5.00%  
 Team Granular 2.00%  
 Balan Granular 0.58%  
 Balan Granular 0.92%  
 Balan Granular 1.72%  
 Balan Granular 2.50%  
 Confront 4x1 gal.  
 Confront 30 gal.  
 Gallery 75DF 4x1 gal.  
 Snapshot TG 50 lb. bag  
 Surflan 12x1 qt.  
 Surflan 5x1 gal.  
 Surflan 2x2.5 gal.  
 Turflon II Amine 2x2.5 gal.  
 Turflon D\* 2x2.5 gal.  
 Turflon Ester\* 2x2.5 gal.  
 XL2G\* 50 lb. bag

## Insecticides

Dursban Granular 0.50%  
 Dursban Granular 0.97%  
 Dursban Granular 1.00%  
 Dursban Granular 1.16%  
 Dursban Granular 1.20%  
 Dursban Granular 2.32%  
 Dursban Granular 2.50%  
 Dursban Turf 2x2.5 gal.  
 Dursban Turf 4x1 gal.  
 Dursban Turf 55 gal.  
 Dursban 50 WSP 6x2 lb.  
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\* Limited quantities available

## Call for a complete product selection guide.

The Andersons welcomes inquiries regarding any of its turf care formulations including those incorporating DowElanco products. Call us toll-free and ask for a free copy of our product selection guide for TeeTime golf course products or for Andersons Professional Turf products.

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Circle No. 103 on Reader Inquiry Card





# Preparing irrigation systems for **WINTER**

## Pay attention to control valves, pump motors and heating and ventilation systems.

by Bob Scott

■ The items requiring the highest maintenance on irrigation systems are:

- 1) Pump station
- 2) Water source
- 3) Lightning protection
- 4) Automatic controls
- 5) Turf rotors

**Pump station**—This is the heart of your system, and is usually the most ignored because it's the most highly technical piece of equipment.

Eighty percent of pump station damage is due to your water source, and that's why I've given the source its own heading in this article.

If closed-coupled centrifugal pumps are maintained, the suction lift through the foot valve and intake line will give the most problems. Close examination is necessary, and if wear is noticed in the foot valve, screen or seal assembly, replacement may be necessary. (Replacement parts may be available for the foot valve, but it usually takes four to six weeks to get them from your supply company.)

The second problem item in closed-coupled pump stations and the first problem item in a turbine pump station is the main control valve.

The pilot control orifice on the main control valve can become clogged at the drop of a hat, if not properly screened.

The new pilot flush screen assemblies can minimize station miscalibration due to clogging. The other items on the pump station usually fall a distant third if maintenance has not been ignored.

The pump motors will need to be periodically lubricated. If high speed (3,600 rpm) motors are installed, expect to replace them every two to three years.

The pump shaft packing will need to be replaced at least once a year.

Mechanical seals of the pump shafts may have been installed; if so, examine excess leakage and adjust or replace if necessary.

The heating and ventilation of the pump station will need evaluation for automation and effectiveness. Proper water drainage for the pump station pad and motor packing will minimize undue moisture damage and control circuitry malfunctioning due to humidity. Painting the inside of the station will minimize air contamination to the electrical circuitry.

The pump station should be inspected by a professional service company. I would recommend a service contract for detailed preventive maintenance with a pump station firm.

**Water source**—Preventive maintenance on this component is usually done during the winter, before any freezes set in. The water source includes three main points:

- water quality and quantity;
- reservoir maintenance; and
- intake structure-screen, wet well intake and wet well.

Algae strikes fear in all of us, but it is best corrected at the source. Aeration, chemical application and even grass carp have been effective. State and federal control is affecting these approaches, so professional advice is necessary.

The increased demand for better year-round turf has caused lake levels to lower. This fluctuation causes suspended particles to infiltrate the system. Drilling wells or transfer pumps are recommended to maintain lake level control.

Reservoir maintenance should be an annual project. Clean up shore banks and open inlets to keep water flowing through the reservoir. The inlets need to be dredged for silt every year to prevent extensive and expensive dredging.

Inlet screens and the wet well must be checked. These screens are usually made of stainless steel, but different grades are affected differently by toxic water. The intake pipe and wet well need to be checked for deterioration and repaired. The wet well is also a point for silt accumulation that can be cleaned with a

sludge-type pump, rentable from any local rental company.

**Lightning**—It's a fact of life. Some type of protection can minimize damage, but manufacturers' recommendations should be observed. Arrestors and ground rod assemblies should be tested and repairs made when necessary. The difficulty with lightning damage is that when you think it's repaired, some other damage will be exposed.

The key: do not take lightning protection lightly!

**Automatic controls**—These should be maintained year-round. During the winter, all control panels should be checked and repaired. The motors, printed circuit boards and wire terminal blocks will show wear first.

The irrigation programming will need to be evaluated and adjusted for overwatering and pumping system inefficiencies. If computer controls are used, winter is an excellent time for updates and checking golf cart damage to pedestals and mounting pads. Check field wiring connections and note repaired points.

**Turf rotors**—In the fall, note the following:

- slow opening and closing;
- weeping;
- coverage/application;
- clogged nozzles;
- cover and case damage; and
- smooth operation.

After noting the defective rotors, proceed with a rotation repair program. Replace or repair 10 rotors at a time. Manufacturers usually have repair services if difficult problems occur. Check to see that the rotors are at ground level. Too high will cause mower damage, too low will prevent the open case from working properly.

—The author is an irrigation consultant in Conyers, Ga. This was reprinted from "Hole Notes," the publication of the Minnesota Golf Course Superintendents Association.



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an old relationship?*





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So continue to look to DowElanco for the latest ideas. We're the company you can count on for quality products, helpful advice and the best service in the business. For more details, call 1-800-352-6776.





# GOLF & ATHLETIC TURF

## Trends toward environmental considerations

**From design to management, Ballantrae Golf and Yacht Club integrates philosophies that keep the surrounding grass, water and air healthy.**

by Ed Etchells  
and Sharon B. Rinehimer

■ When Golden Bear International was initially contacted in 1990 to design the Ballantrae course along the St. Lucie (Fla.) River, exhaustive studies were conducted. Great care was also taken during construction to preserve and set aside the environmentally-sensitive areas on 402 acres.

Forty acres were set aside as a wetland preserve which drains into the river. Twenty-two acres were preserved as a fenced-in protected hammock of native vegetation for such wildlife as bobcats, gophers and sandhill cranes.

Ballantrae worked with the South Florida Water Management District and the St. Lucie Sewer Treatment District to conserve water by planning effluent water irrigation. A holding pond was designed and built specifically to retain and re-irrigate the effluent runoff back onto the course.

An advanced Rainbird Maxi computerized irrigation system and weather station reads the weather conditions, determines the amount of water needed daily, thus reducing erosion throughout the course.

Thirty-year veteran superintendent David Holler spent considerable time with the project director to design the maintenance



Cleaning systems like the one used at Ballantrae help golf courses meet environmental standards.

equipment wash-down, chemical storage facility, and mix-and-load areas.

An impervious, permanent concrete wash pad contains all the contaminated water from the washing operations, and a separate one is for mix-and-load spills. Golf course maintenance wash water typically contains such pollutants as oil, grease, related hydrocarbons, and trace amounts of herbicides, insecticides, fungicides and fertilizers.

To maintain Ballantrae's high profile as a new premier course, Holler purchased and had installed an RGF Ultrasorb closed-loop wash water recycling system. It has a grass filtration and drying device, hydrocarbon separation, proprietary H.I.P. filter media, storage/oxidation, and automatic delivery of all wash water for total re-use. Ballantrae's maintenance team always washes turf equipment, so savings in water use is substantial.

In an average month, the course uses about 35,000 to 40,000 gallons of water

just for one wash water maintenance operation alone. The RGF system can conserve 420,000 to 480,000 gallons annually.

Holler's primary concern was to eliminate the groundwater contamination experienced by other courses in their maintenance operations—yet reduce budget expenditures.

"The savings (calculated in months time) more than adequately paid for the RGF Ultrasorb recycling system," Holler says. "I feel confident that we are doing everything possible to conserve water and effectively protect the natural resources that abound our beautiful course."

By eliminating potential contaminants that normally get washed onto the grass or dirt area, the course's liability for EPA or state fines and/or assessments are effectively reduced or negated. Special care must also be given to the chemical storage and mix-and-load activities to assure that all OSHA, EPA and state regulations are followed, and to protect the environment

### ELSEWHERE

**Winter golf maintenance:  
turf's last gasp before snow,  
page 4G**

**Building baseball fields  
the right way in St. Louis,  
page 8G**









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EVERYONE IN THE GOLF WORLD.  
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Box 4913, Kansas City, MO 64120. (800) 842-8020.

Do it for those in golf who actually like landing in trees and  
splashing in water hazards.





and employees from possible spills or accidents.

Holler wanted recycling equipment, wash down area and mix-and-load to be adjacent to each other on the impervious pad for easy, efficient operations.

**Plan for safety**—Environmental issues do not go away. Here are our recommendations to golf course designers, contractors and superintendents:

- Develop a plan to strategically incorporate environmentally sensitive areas such as wildlife preserves, indigenous tree hammocks and wetlands.

- Conserve water; use an effluent water source for irrigation and a recycling system for maintenance washing.

- Follow through with responsible construction activities to minimize damage to protected plants and animals.

- Set up environmentally sound management practices for course maintenance.

- Consider implementing the new EPA

storm water run-off plan.

If a course is properly designed and managed, the potential hazards to the environment can be reduced.

It pays to play it safe. Like doctors practice defensive medicine, golf courses should practice defensive environmental programs. The alternatives can lead to regulatory fines, decreased property values, expensive clean-up, adverse media attention, and law suits.

Ballantrae Golf and Yacht Club is just one of the many courses coming to the forefront of being a premier, "environmentally in-synch course," and with all of the recent media and television coverage, it will not be long before most or all golf courses in the U.S. adhere as well.

—Ed Etchells is president of *Golfturf*, a division of *Golden Bear International*.  
Sharon B. Rinehimer is vice president and general counsel for *RGF Environmental Group*.

Grote, because the members at this Milford, Ohio course "love their golf."

The temperature can be as low as 35, says Grote, and he'll see about 30 members on the course.

Grote says the extended play causes a serious *Poa annua* problem in greens.

"The bent can't recuperate when it's dormant," says Grote. "The poa wakes up



**Grote: Experiments to stop *Poa annua*.**

first and has a good foothold by the time the bent starts to grow."

Grote's looking for a solution.

"As of December 20th, we will keep one green closed and use a temporary one in its place," to

see how the unused green fares during the winter.

As a possible cure for the poa problem, in August Grote's crews applied a mixture of Anderson's fertilizer and Dimension herbicide to one-half of three greens. They'll repeat the treatment in February.

To help the greens cope with foot traffic, Grote has the cups rotated once a week if the turf's not frozen.

"In winter, (the course is) compared to the public courses. In the summer, we're compared to the other private clubs," Grote says, which sounds like a testament to his skill as a greenskeeper.

But he thinks it's because somebody up there likes him.

—Terry McIver

## Winter golf: Turf's last gasp before snow falls

**Dormant bentgrass is helpless against heavy traffic. Keep an eye on temperature swings, apply extra topdressing, and pray for snow.**

■ A recent study showed golf to be one of the favorite winter sports in the eastern and midwestern U.S...

(Just kidding.)

But winter golf is one thing some courses put up with due to member demand or as a way to bring in some extra revenue. Most fans of outdoor sports are content to wait until spring. But not golfers.

"You get a nice day, you want to go hit the ball around," says Joe Alonzi, superintendent at Westchester Country Club, Rye, N.Y.

Westchester has multiple courses, so Alonzi can keep one 18 closed; but on the other links, he's faced with the challenge of protecting the greens from serious damage.

One challenge of winter golf, says Alonzi, is being able to guess what the weather will do on any given day. In the early days of winter, the temperature will fluctuate from a morning freeze to an afternoon thaw.

To help prepare for winter golf, Alonzi applies an extra layer of topdressing just before winter, or sometime during.

"Spring maintenance is more affected," says Alonzi. "The greens might need an extra aeration, fertilization or pesticide spraying, as a result."

"There isn't much you can do in the winter to maintain the course," he says, "beyond keeping it closed on the bad days."

**Poa problem**—Winter golf has been a tradition at Terrace Park Country Club for many years, says Rick



Winter golf is put to rest once the snow flies.



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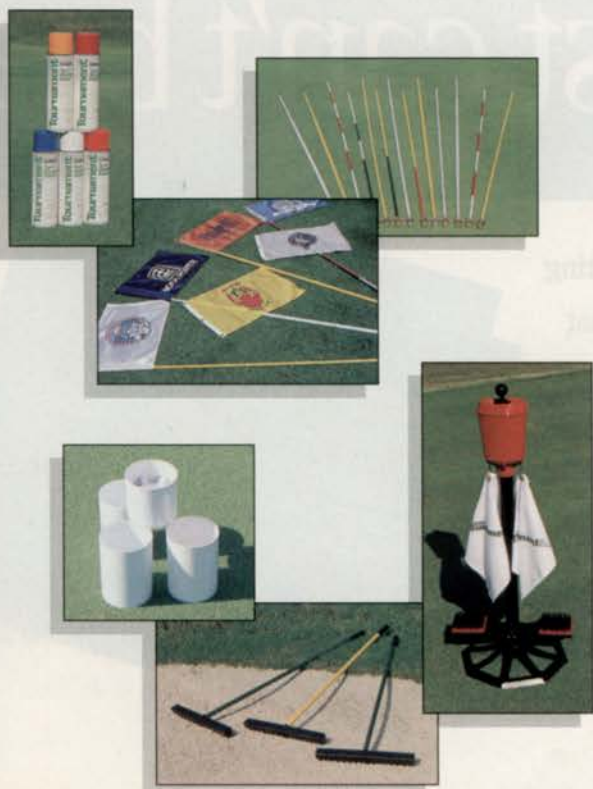
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# Diamond construction—the right way

**Rich Moffitt's in-house staff makes this urban university's ball fields and campus a colorful oasis.**

■ When Richard Moffitt, supervisor of grounds, started rebuilding the Saint Louis University baseball field he only had one question....how do you do it?

He freely admits, "I knew how to grow turfgrass, but I didn't know how to build a baseball field. So I started calling some of the STMA (Sports Turf Managers Association) members. I'm glad I did." Moffitt said experienced athletic grounds managers in the association shared information freely. He's now an active member himself.

Another fortunate step, he says, was enlisting the aid of Steve Erbe at Top Care Lawn Services to remedy the field's one overriding handicap. It shared part of centerfield with a softball diamond. Water drained from the baseball field to the softball infield with each rain.

"It was finally decided that this was not going to work. We were not going to be able to play on both of these fields at this location," says Moffitt. "The softball field was never going to be right." It was taken out.

Then, he and Erbe walked the baseball outfield and decided it needed to be regraded and resodded. After the regrading and the grow-in, it's almost impossible to tell where the softball field was. A bright-red brick-dust warning track sets off the irrigated deep-green Kentucky bluegrass playing surface that now compares favorably to major league fields. Still, the ball park is a hidden treasure. It's neatly tucked into a corner of the urban campus.

Also, the baseball field literally lies in the shadow of the university's huge synthetic athletic field. Viewed from the top of the 3,000-seat brick Billiken Sports Stadium, the Polygrass surface below looks like it's approximately 3-4 acres. Moffitt isn't sure of its exact dimensions,



**Richard Moffitt maintains Saint Louis U's ball fields and benches, and lots of other stuff, too. About 7,500 undergrads attend S.L.U.**

but he says it can accommodate three different athletic events—played across the surface's width—simultaneously.

**Numero uno?**—The light green synthetic field is home to the university's powerful soccer team. Soccer here is a sellout. The Saint Louis Billiken's are nationally ranked again this season. (*A Billiken? A student said it was an old fashion goodluck charm.*)

"I know that if the coach or the players had their 'druthers, they'd choose to play on grass any day," says Moffitt. "But this field is about as good as a synthetic field gets." Installed in 6-foot-wide sections over gravel about four years ago, the surface drains incredibly fast. "We've never had a rainout because of field conditions," says Moffitt. Good thing, too. Besides soccer, the sprawling synthetic surface is used for field hockey, campus intramurals, and other social and fund raising events.

The university's outside athletic facilities are virtually new and so, in a sense, is the campus itself. At least it looks new to alumni who haven't been back in a few years. The university has spent \$200 million in its buildings and grounds in the last decade.

"It's fascinating to watch parents who came here in the '60s and '70s walk through campus with their kids. You can see the surprise in their eyes," says Moffitt.

**The campus 'greens'**—Just months ago, in fact, the university closed Spring and West Pine Streets. It replaced them with tree-lined walkways, the new John E. Connelly Mall.

A red brick bell tower encircled by fountains and a fountain dominates the mall's center. To one side is a waterfall. A steep

bank—too steep to mow—near the waterfall is planted in hardy Baltic ivy. The entire area is surrounded by seven acres of turfgrass. It's surprisingly green and trim considering the number of students enjoying the mall on pleasant St. Louis afternoons.

In fact, the entire campus is basically self-contained now, an island of grass, gardens and graceful brick buildings. You enter it

through redesigned entrances marked by elegantly massive, gild-trim gates.

Moffitt says Saint Louis University President Father Lawrence Biondi, SJ, and Associate Vice President Charles R. Smith are determined to make Saint Louis's urban campus one of the most beautiful in the nation. That's why since 1992 the campus has seen the addition of at least 400 three-inch-or-larger trees, more than 4,000 perennials (several hundred different varieties) and about 1500 shrubs.

**'Showcases'**—Some of the on-campus showcases include the popular Dolphin Pond, and Walsh Plaza brightened with its sprays of colorful annuals, the ever-evolving perennial gardens at Joseph Boland Plaza, the serene rock garden behind Verhaegen Hall.

"In an urban campus where you're surrounded by concrete, you have to really intensify the green spaces," says Moffitt. "We've put in open grass areas and closed off parking lots and put in gardens. It's a recruitment tool for us. It's our front door."

About 95 percent of the turfgrass at Saint Louis University is irrigated (22 different irrigation systems) and mowed each week. Moffitt, who likes micro-environmental design, says his in-house grounds staff must be incredibly flexible as it maintains benches, walkways, snow plowing, in fact, just about everything outside the buildings.

"I used to call myself a horticulturist, and that's my background, but I've come to realize that if you're going to make things happen in grounds, horticulture's extremely important—but there's a whole lot more too."

—Ron Hall



## LM REPORTS

# New skid-steer loaders can pay for themselves in heavy-duty workloads

**Versatility a key to overall landscaping effectiveness of these machines.**

■ It's no secret why skid-steer loaders are popular in the golf and, especially, landscape industries. It's their versatility. Besides being excellent loaders that can fit into relatively small places where bigger equipment can't, here are some other uses for the machines, if you've got the right attachments:

- stump grinder
- tiller
- snowblower
- landscape rake
- pallet fork
- box scraper
- trencher
- rock-picker
- auger
- trencher
- scarifier
- backhoe

The skid-steer loaders listed below come in every size from small 19 hp engine-driven units with lifting capacities beginning at 750 pounds to the big heavy-duty machines with engines that deliver upwards of 60 hp and lifting capacities over one ton.

A good variety of attachments are avail-



Bobcat with Harley rake attachment

able, many of which are made by the original equipment manufacturers listed below. But there are more, including these:

**Glenmac/Harley** makes a line of attachments, including its Model S-6 Power Box Rake that can windrow thrown material to the left or right of the rake. Bi-angular construction permits an operator to angle the single roller and twin barrier bar up to



Thomas loader with Rock Hound attachment



JCB's most popular skid-steer

20 degrees left or right of center.

**DuAl Manufacturing** has both a skid digger (the economical Model 720 digging attachment) and three different models of backhoes (Models 1015, 1025, 1035), along with a line of trenchers. The skid digger can go 72 inches deep with 185-degree bucket rotation.

*more on next page*

## SKID-STEER LOADER SPECIFICATIONS

Model	Dumping Height	Dump Reach	Forward Speed	Lift Capacity	Breakout Force	Tipping Load	Engine Size
Bobcat 753	109.1"	n/a	n/a	1,300 lbs.	n/a	2,600 lbs.	40 hp
Bobcat 763	114.5"	n/a	n/a	1,500 lbs.	n/a	3,000 lbs.	46 hp
Bobcat 773	115"	n/a	n/a	1,700 lbs.	n/a	3,800 lbs.	46 hp
Bobcat 853	119.6"	n/a	n/a	1,700 lbs.	n/a	n/a	n/a
Case 480FLL	101"	27"	21.9 mph	4,572 lbs.	5,185 lbs.	n/a	69 hp
Deere 3375	74.8"	21"	5.8 mph	750 lbs.	1,400 lbs.	n/a	19 hp
Deere 4475	87.9"	20.8"	6.5 mph	1,450 lbs.	2,600 lbs.	n/a	32 hp
Deere 6675	90.4"	28"	7.3 mph	2,000 lbs.	3,712 lbs.	n/a	45 hp
Deere 7775	90.4"	28"	7.4 mph	2,000 lbs.	3,712 lbs.	n/a	52 hp
Ford-NH 464, 465	87.8"	24"	6.6 mph	1,450 lbs.	3,405 lbs.	2,760 lbs.	30 hp
Ford-NH 565	90"	28"	7.1 mph	2,100 lbs.	3,712 lbs.	3,370 lbs.	40 hp
Ford-NH 665	90"	28"	7.1 mph	2,100 lbs.	3,712 lbs.	3,410 lbs.	50 hp
JCB 150	89"	27"	11 km/hr.	3,570 lbs.	1,985 lbs.	1,000 kg.	43 hp
JCB 165	88"	26"	11 km/hr	3,570 lbs.	3,085 lbs.	1,300 kg.	43 hp
Mustang 920	84.5"	19.3"	4.5 mph	850 lbs.	1,800 lbs.	1,700 lbs.	19 hp
Mustang 930A	86.5"	17.5"	5.7 mph	1,000 lbs.	1,975 lbs.	2,000 lbs.	28 hp
Mustang 940	88.5"	21.3"	6.4 mph	1,350 lbs.	4,100 lbs.	2,700 lbs.	38 hp
Mustang 960	92.7"	27"	6.8 mph	1,700 lbs.	5,050 lbs.	3,400 lbs.	57.5 hp
Thomas T-835	69"	14.5"	5.4 mph	800 lbs.	2,200 lbs.	1,800 lbs.	19.8 hp
Thomas T-103	87.8"	24"	5.4 mph	1,000 lbs.	3,250 lbs.	n/a	31.4 hp
Thomas T-133	88.3"	24.3"	6.2 mph	1,300 lbs.	3,260 lbs.	n/a	43 hp
Thomas T-173HL	106.8"	18.8"	7.3 mph	1,700 lbs.	n/a	3,400 lbs.	52 hp
Thomas 203HD	94.2"	29.2"	7.3 mph	2,050 lbs.	5,100 lbs.	4,100 lbs.	52 hp
Thomas-233HD	91"	25.3"	7.7 mph	2,300 lbs.	4,860 lbs.	n/a	62 hp

*n/a = not available at presstime*

*Source: LM mall/phone survey, October 1994*





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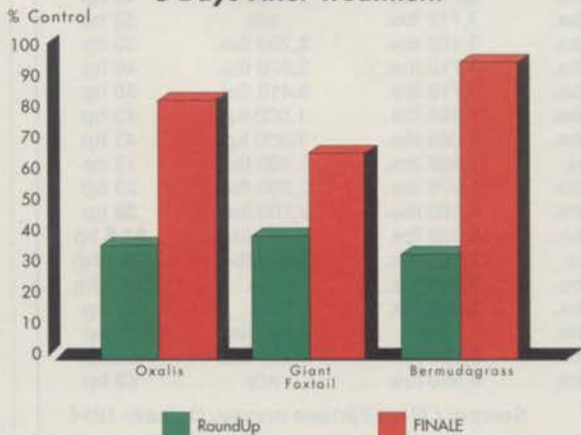
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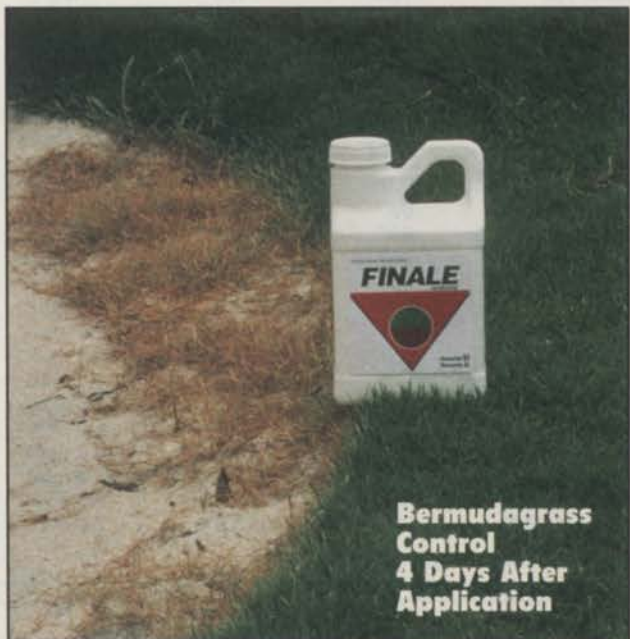
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Source: Hoechst-Roussel Agri-Vet Company Field Study 1993



**Bermudagrass  
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\* Under natural conditions the half-life of Finale in soil and water (DT50) is between 7 and 20 days, depending on temperature, aerobic conditions and microflora.

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—Jerry Roche



**John Deere units carry up to 2000 pounds, depending on model**



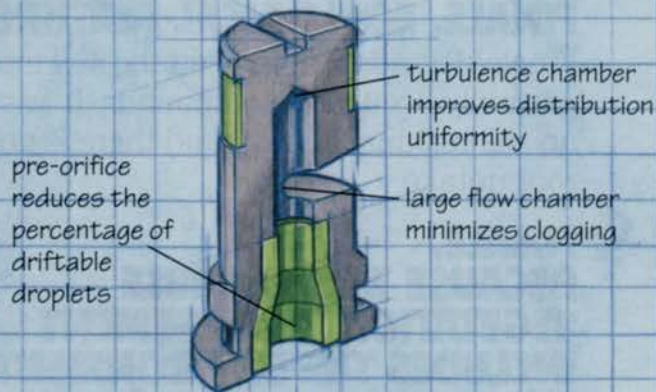
**Thomas's Swinger skid steer**



**Case's 1838 has a rated operating load of 1300 pounds**



**Ford-New Holland skid-steers are available with 30- to 50-hp engines**




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## Soil problems? Try an 'amendment'

**Though they come in all shapes and sizes, each has specific functions. Here are some available products and what they can do for you.**

■ Soil problems are the bane of landscape managers everywhere. In most turf textbooks, entire chapters are devoted to soil characteristics and the problems they create in growing healthy turf.

When problems arise with soil composition, turf managers might turn to a class of products known as "soil amendments," which can modify soil characteristics in any number of positive ways.

Soil amendments can modify:

- 1) soil texture
- 2) soil structure
- 3) the soil's chemical properties
- 4) the soil's long-term stability
- 5) availability of nutrients, water, etc.

to the plant

- 6) amount of other treatments (fertilizer, pesticides) required
- 7) cost of maintaining healthy plants

Soil amendments are used to increase air porosity, change permeability, or increase water retention. Many contain micronutrients or in some way benefit nutrient release and/or overall plant health.

Soil amendments come in as many different forms as there are uses. They range from sand—found naturally in the environment—to many specialty products like super-absorbent polymers.

Some common types of soil amendments are **inorganic**, usually in granular form. They can improve pore space, water retention, percolation and infiltration, and correct acidity. The most commonly used coarse amendment is sand because of its effectiveness, stability and low cost.

### BENEFITS OF SOME SOIL AMENDMENTS

Calcined clay	improves	pore space water retention water infiltration water percolation
Lime	improves	soil chemical properties (corrects) acidity
Organic amendments (compost, peat, etc.)	improve	soil structure pore space nutrient retention water retention soil resiliency cation exchange capacity
Processed mica	improves	water retention pore space cation exchange capacity
Sand	improves	aeration water infiltration water percolation
Wetting agents	improve	water infiltration water retention

ments are calcined clay (*Dialoam, Turface, Terra-Green*), processed mica (vermiculite, *Terralite*), lime (*Limestone F, Lime Crest*), perlite, diatomite, ureaform aggregates (*Hydromul, Styromul*), clinoptilolite zeolite (*Aquasand*), expanded shales (*Haydite, Weblite, Idealite*), activated charcoal, pumice, slag, fly ash, and cation and anion exchange resins.

Another kind of soil amendment is **organic** in nature. They improve soil structure, aeration, nutrient and water retention, resiliency, aggregation and cation exchange capacity, and increase the population of beneficial microorganisms.

(*Canadian Sphagnum Peat Moss, Partac Peat, Baccto*), humus (*Humate, Liquid Humus, Iron Sea Humus, Sea Humus, New Mexico Memefee Humate*), manure, sludge, sawdust, tree barks and fibers (*Top N' Turf*), seaweed (*SeaGreen*), kelp (*Potent Sea, Sea Green*), activated charcoal, poultry litter, peanut and pecan hulls, corn-cobs, cotton burr compost, rice hulls, and vegetable wastes.

Another type of soil amendment is called the **surfactant** or **wetting agent**. They are used to improve water infiltration and water retention. Good examples are *Aqua-Gro, Hydrowet, Lescowet*, and



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*Terra-Sorb.*

In some cases, **compost materials** are also considered soil amendments. They are used to improve soil structure and water retention.

Other types of soil amendments:

- **soil conditioners,**
- **polymers** (like *Krilitum* for reducing erosion, *Terra-Sorb*, *StockSorb*),
- **sewage sludge** (for enhancing soil texture, improving aeration, infiltration and water-holding capacity, like *Earthmate*);
- **clay balls** (for infiltration, nutrient and moisture retention),
- **starch polymers** (like *Super-Slurp* for water retention), and
- **mulches** (for temperature stability, less water evaporation).

Following is a partial list of the many soil amendments available.

—Jerry Roche

## Soil amendments

**Accuwet:** (see Lescowet)

**Actosol:** an organic humic acid with fertilizer additives that improves soil texture, promotes microorganism activity and increases moisture retention. (Arctech)

**Agroroots:** a kelp-based plant stimulant that promotes root growth and plant vigor. (Agro-Tech 2000)

**Aqua-Gro:** non-ionic organic wetting agent that alleviates localized dry spots and compaction, promotes nutrient uptake. (Aquatrols)

**Aquasand:** a form of zeolite (volcanic ash) that absorbs ammonium and other soil impurities, absorbs and releases moisture for less watering, and prevents root rot. (Creative Curb)

**Axis:** made from diatomaceous earth that reduces watering requirements, increases aeration, reduces compaction and improves percolation. (Agro-Tech 2000)

**Baccto Peat Moss:** comes in either sphagnum or horticultural mixes. (Michigan Peat)

**Back to Earth:** cotton burr compost products that can be used as soil conditioners and/or topdressings. (Back to Earth Resources)

**Beam Clay:** a baseball diamond surfacing product. (Partac Peat)

**BioGroundskeeper:** (Sustane)

**Break-Thru:** a non-ionic wetting agent/surfactant that increases the effectiveness of pesticides. (Agro-Tech 2000)

**Canadian Sphagnum Peat Moss:** (Conrad Fafaro)

**Dakota Peat:** (Dakota Peat & Blenders)

**DryRoots Greens Grade:** an organic soil conditioner that increases root growth and microbial activity. (Roots/RGB)

**Earthmate:** a natural organic sewage

sludge that can be used as a mulch but retains moisture better. (PRS Materials)

**Essential:** a product derived from plant extracts and hydrolyzed organic protein that stimulates the natural breakdown of organic matter in the soil. (Growth Products)

**Gro-Power:** a soil conditioner, with or without soil penetrant. (Gro-Power)

**Grozyme III:** a product that can activate locked nutrients. (Master Turf)

**Gypsum-F:** a flowable product that increases permeability and lowers sodium. (W.A. Cleary)

**Humate Ag, LS and Stress Reliever:** soil conditioners and biostimulants made of slow-release, granular humic acids. (Humate International)

**Hydro Gel:** a plant watering aid that absorbs and holds several hundred times its weight in water. (Finn Corp.)

**Hydro Source:** a water-absorbing, synthetic polymer that increases long-term water-holding capacity. (Jonathan Green)

**Hydrowet:** a blend of synthetic surfactants that improves water infiltration into the soil profile, thus increasing the moisture content of the soil. (Kalo)

**Iron Sea Humus:** cold-processed seaweed plus humic acid plus iron that enhances root growth. (Humus Products)

**IronRoots:** a biostimulant that promotes root growth and color. (Roots/RGB)



**Kick:** a natural humic acid-based wetting agent with kelp, iron complex and sugars that stimulates root development and helps release tied-up nutrients. (Earthworks)

**Lescowet and Accuwet:** surfactants plus soil conditioners (87% and 25% active ingredient, respectively) that reduce water use, eliminate localized dry spots and encourage deep rooting. (Lesco)

**Limestone-F:** a flowable limestone that neutralizes pH. (W.A. Cleary)

**Liquid Humus:** a 12% concentrate humic acid soil conditioner and root stimulant. (Humus Products)

**Luma-pHix:** a highly concentrated chelated liquid calcium to treat calcium-deficient soils, or soils where pH is high from excessive sodium. (Aabaco)

**Luma-Plex:** a concentrated liquid humic acid that acts as a chemical aerifier and organic input to eliminate compaction and flush salt out of the rootzone. (Aabaco)

**Marine-Gro:** an organic conditioner and stimulant that improves plant root structure and helps turf resist stress. (Agro-Tech 2000)

## Basic suppliers...

For more information about a specific company's products, please circle the number on LM's Reader Service Card that corresponds with the number listed below:

**Agro-Tech 2000 (#190)**

**Aimcor (#191)**

**Amereq (#192)**

**Aquatrols (#193)**

**Arctec (#194)**

**Back to Earth (#195)**

**Bonide (#196)**

**W.A. Cleary (#197)**

**Conrad Fafaro (#198)**

**Creative Curb (#199)**

**Dakota Peat (#200)**

**Doggett (#201)**

**Earthgreen (#202)**

**Earthworks (#203)**

**Emerald Isle (#204)**

**Evans Landscaping (#205)**

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**Jonathan Green (#209)**

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**Partac Peat (#228)**

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**Roots/RGB (#232)**

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**Soil Seal (#234)**

**Stabilizer (#235)**

**Stockhausen (#236)**

**Sustane (#237)**



**Market Earthmate:** a bio-compost that enhances the physical structure and workability of the soil. (Prism)

**Maxiplex:** a concentrated humic acid. (Florine Products)

**Nature's Blend:** a compost material, made either of mixed yard waste or leaf waste, that conditions the soil for better plant rooting and increases cation exchange capacity. (Kurtz Brothers)

**New Mexico Menefee Humate:** a granular product that helps guard against contaminants in the soil, balances micronutrients, improves soil structure and cation exchange capacity. (Earthgreen Products)

**N-Hance:** liquid calcium in a humic acid base that acts as a sodium reducer, root stimulant and nitrogen stabilizer for urea. (Earthworks)

**Northwoods Organics:** custom-processed peat to match sand particle size in loose bulk, "super sacks" and compressed bales. (Northwoods Organics)

**Nutra-Aid:** derived from plant extracts and manures that improves permeability and penetration, helps retain organic matter. (Nature's Touch)

**Nutri-Sul:** a sulfuric acid soil treatment that, after injection, reduces soil pH and releases minor elements. (Doggett)

**Partac:** a heat-treated golf course peat topdressing. (Partac Peat)

**Pelletized Gypsum:** conditions clay soil and neutralizes salt damage. (Jonathan Green)

**Pene-Turf:** a biodegradable product that improves permeability and aeration, promotes proper drainage, reduces erosion. (Four Star Services)

**Penn-Mulch:** a seedbed mulch made from recycled paper that contains starter fertilizer to protect seedbeds. (Agro-Tech 2000)

**Pervade:** a biodegradable wetting agent and penetrant. (Florine Products)

**Professional Soil Bioinoculant:** an all-natural animal byproduct containing soil microorganisms and all-natural fertilizer that helps reactivate sterile-type soils. (Lesco)

**Potent-Sea:** a liquid sea kelp biostimulant that stimulate roots, reduces head stress and increases microbial activity. (Earthworks)

**Primer 604 Matrix Flow:** a soil surfactant that corrects and prevents soil water repellency to move water through the soil uniformly. (Aquatrols)

**Professional Plant Biostimulant:** multiple plant hormone that promotes root growth, plant development and stress tolerance. (Lesco)

**Profile Porous Ceramic:** a permanent product providing balanced porosity to reduce competition, improve drainage, solve localized dry spots. (Aimcor)

**PSA Porous Silica Aggregate:** all-natural diatomite that increases permeability, rootzone oxygen, flow, exchange of air and water. (PSA)

**Rebound:** a combination of crumb rubber and organic compost that increases pore space. (JaiTire)

**Relief:** a natural enzyme that helps soil release excess salts. (Nature's Touch)

**Roots:** a dry formula natural soil conditioner for new plantings and stresses lawns. (Roots/RGB)

**Sand-Aid:** a granular sea plant meal soil conditioner and topdressing that increases

organic weight, moisture content, carbon release rates, stress tolerance and nutrient-holding capacity. (Emerald Isle)

**SarGro:** derived from yucca, a soil wetting agent that improves water efficiency. (Sartec)

**Sea Humus:** cold-processed seaweed plus humic acid that conditions soil. (Humus Products)

**SeaGreen (Plus):** a liquid kelp product that supplies micronutrients to soil, with or without fish emulsion. (Bonide Products)

**Soil Acidifier:** 90% elemental sulfur that lowers soil pH, improves disease resistance and plant hardiness, lowers water usage. (Bonide Products)

**SoilMoist:** polymer composts that increase seed germination. (JRM Chemical)

**Soil Seal:** high-grade latex acrylic soil stabilizer that helps prevent erosion when sprayed on the soil by stabilizing its surface. (Soil Seal)

**Stabilizer:** an organic soil additive that helps produce a firm, consistent surface under all weather conditions. (Stabilizer)

**StockSorb:** an absorbent polymer for turf, nursery and horticultural applications that performs well against soil pressure. (Stockhausen)

**Sulfur-F:** a sulfur product that acidifies soil. (W.A. Cleary)

**Super-Cal Liquid Limestone Substitute:** improves germination and root development. (Jonathan Green)

**Supersoil:** a blend of topsoil, regrow, peat moss, mushroom compost and perlite. (Evans Landscaping)

**SuperSorb:** acrylic copolymer crystals that act as water absorbent to retain water and release as required by the plant(Aquatrols)

**Sustane Soil Builders:** (Sustane)

**TD 1000:** a topdressing blend of humus and silica sand. (Harford Industrial)

**Terra-Green:** a soil conditioner drying agent and topdressing. (Partac Peat)

**Terra-Sorb:** a super-absorbent polymer called acrilomide that holds and manages water release to the plant. (Industrial Services)

**TnG:** a product for straight sand topdressing of golf courses and athletic fields. (Harford Industrial)

**Top 'N Turf:** natural, untreated compost made of finely-ground bark with pH of about 5.0 for greens construction and soil conditioning. (National Bark)

**Turface:** an athletic field amendment that controls moisture and reduces compaction. (Aimcor)

**TurfGrid:** a fibrillated polypropylene fiber that stabilizes sand-based sports turf. (Stabilizer)

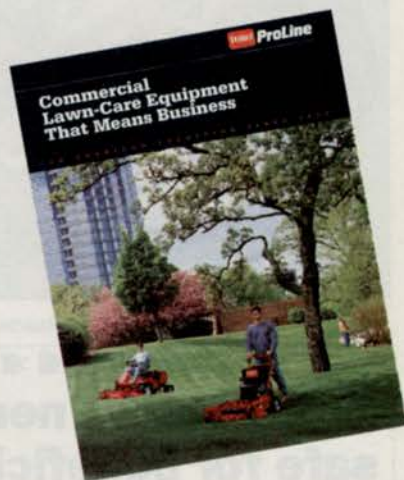
**Vita-Aer:** an all-natural organic plant material in liquid form that breaks the surface tension and thatch for water penetration into the soil and stimulates root development. (Green Pro Services)

**Vital Reactions:** a product made of plant materials only that reduces soluble salts, encourages water penetration and stimulates root and rhizome growth. (Nature's Touch)

**Viterra Gelscape, Plant-Gel, Root-Dip:** (Amereq)

**Wet Foot G:** a granular wetting agent that contains **Wet Foot L** on vermiculite, to be mixed with peat, soils or soilless mixes for moisture control. (Parkway Research)

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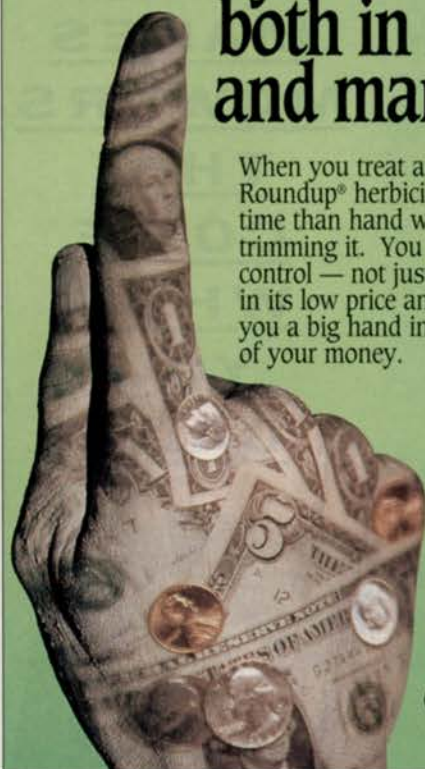
Circle No. 126 on Reader Inquiry Card

Landscape Management, November 1994 31



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END-47080 2/94

Circle No. 115 on Reader Inquiry Card

## Study shows nematodes safe for beneficial insects

**Studies suggest the nematodes are selective when dining out.**

By James E. Guyette

■ Using nematodes on lawns will not harm beneficial insects, according to a recent study at Ohio State University.

The tiny roundworms—officially called entomopathogenic nematodes—kill bluegrass billbug larvae, cutworms and sod webworms and are marginally effective against Japanese beetle larvae, which are all common turf pests, says Dr. David J. Shetlar, assistant professor of entomology at OSU. But earthworms, predatory beetles, mites and other beneficial insects are seemingly immune. "These nematodes appear to be selective assassins," says Shetlar.

A lot of the selectivity has to do with the natural habitats of the organisms found in lawns. "Most of the beneficial insects do not really live in the soil where the nematodes are moving around," Shetlar explains.

**Clearing a hurdle**—The study is among the first to measure the impact of nematodes on non-target organisms, according to Shetlar. He notes that the results are an important vindication for nematodes as a biological pest control.

"It's the first biological alternative that has efficacy that we can recommend," says Shetlar.

New techniques in nematode production have brought down the costs to be more in line with other control agents. "They're able to produce trillions of nematodes a day rather than billions of nematodes a day," he explains, adding that the cost to apply one billion nematodes per acre—the recommended rate—is about \$70.

Nematodes are also becoming available for use on warm season grasses. "There's several nematode types that are being developed for Southern lawns," he reports. Nematodes are especially effective in controlling fleas and mole crickets. "Mole crickets sort of take over the grubs (as a main pest) in Southern lawns," Shetlar says.

It is especially important to discover that nematodes are indeed selective when it comes to which organisms are targeted.

"In the lab, nematodes kill any insect they can get into. In the field, there was concern that they would be no different than an insecticide that kills everything. Thankfully, that's not the case. People who are looking for a selective, non-chemical treatment can use these nematodes," Shetlar says.

Entomopathogenic nematodes kill insects not as parasites, but as agents of disease. A nematode larva enters the insect just as a parasite does. But rather than feeding directly on the insect, it regurgi-



**Shetlar: Nematodes most effective in mid-June.**

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END-47081 2/94



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IND-47082 2/94



larvae. Untreated plots had about 80 bugs per square meter; treated plots had only about 14.

- Nematodes run out of steam pretty quickly. At two weeks after the initial treatment, two-thirds of the "guinea pig" waxworm larvae were infected; at seven weeks, fewer than one-third were infected. "This result means it's important to apply the nematodes when the billbug larvae are feeding in the soil near the turf crowns, usually in mid-June," Shetlar says.

- Most importantly, nematodes appear ineffective against beneficial garden predators and decomposers. Study results show no significant differences between treated and untreated turf in numbers of earthworms, mites, spiders centipedes, millipedes and beetles.

"Within a month after the nematode application, populations of non-target organisms were pretty well normal," Shetlar reports.

"In terms of non-target insects, we were most concerned with above-ground beetles and rove beetles," Shetlar notes. "They're probably the No. 1 predator of cutworm eggs and sod webworm eggs. According to our results, entomopathogenic nematodes should not harm these populations."

Shetlar says that nematodes can present a convenient, economical and environmentally friendly method of turf pest control. For best results, a mid-June application (in Ohio, local weather conditions may vary) is advised. "The best results occur when the lawn is moist from recent rains or just after a watering," Shetlar points out. "I also recommend a generous watering immediately after applying the nematodes."

*—The author is a freelance writer based in Cleveland, Ohio.*

tates a packet of bacteria, spewing it into the insect's body cavity. The bacteria causes rapid infection, paralyzing and killing the insect within 48 hours.

When the insect is dead, the nematode sets up shop in the carcass, feeding on bacteria and growing to maturity. If both a male and female are present in the same insect carcass, they mate, creating a new generation of infective youngsters. When the food runs out, these larvae leave the original insect and look for others to infiltrate and kill.

For the OSU study, Shetlar and his colleagues, technician Kevin Power and entomologist Dr. Harry Niemczyk, selected three bluegrass/ryegrass turf sites in Northern Ohio—among them Niemczyk's home lawn. Each site was divided in two; one half got the nematode treatment, the other half did not.

**Sub-surface placement**—The researchers applied the nematodes in mid-June using a sub-surface applicator. This device, a Rainsaver Jr., slit the turf every three inches and injected nematodes to a depth of about one inch. The injection unit was important because it protected the nematodes from damaging rays from the sun, Shetlar says.

To gauge the effect of nematodes on centipedes, spiders, mites and non-target insects, the researchers took soil cores from all sites—treated and untreated—every 10 days. They measured the effect of nematodes on their actual targets, billbugs and sod webworms, by sampling and counting the number of pests in the nematode-treated sites as opposed to the non-treated sites.

The results:

- Nematodes are particularly effective against bluegrass billbug

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# HOT TOPICS

## N.Y. green groups fight leaf blower laws

**Twenty-five complaints prompt controversial legislation in a New York city of 60,000.**

**WHITE PLAINS, N.Y.**—Landscape contractors from New York towns and villages in and around Westchester County are protesting tighter restrictions on leaf blowers.

In September, 357 members of various New York green industry association chapters, nurseries, and product manufacturers and distributors held a rally outside city hall here, hoping that mayor Sy Schulman would hear them out. Schulman gave them about a minute of his time, but promised to hear more at a later date.

Joe Tinelli of the New York Turf & Landscape Association, Inc. (NYTLA) and president of Tinelli Landscape Co., Yonkers, called the rally "massive, organized and diplomatic."

It was also an attention-getter. Tinelli was interviewed later by a reporter for the *New York Times*, and a local television station picked up the leaf blower story for the nightly news.

"We want a compromise," said Tinelli, who claims a recent ban on leaf blowers has been declared unconstitutional in the New York suburb of Peekskill.

"We've contacted an attorney who won the case on the grounds that it's unconstitutional to remove a tool that's essential to a trade," says Tinelli.

**Wake-up call**—Tinelli says he under-

stands how someone could become upset over excessive noise caused by unthinking operators, but he puts the blame on "the unlicensed contractors who attack a job with three or four leaf blowers" during early morning hours or dusk.

Given the small number of actual complaints about leaf blowers, many wonder whether the problem is real or imagined.



According to Tinelli, only 25 people in White Plains, a city of with a population of 60,000, filed complaints.

The NYTLA says New York green industry associations have spent thousands of dollars on public relations and made many requests for compromise, but are still not being heard. And according to Tinelli, Westchester County landscapers were promised a voice when it came time to draft legislation restricting leaf blower use, but were eventually ignored by legislators.

Contractors seek a compromise which would let them use leaf blowers year-round, but only during certain times of

the day.

Tinelli and others believe the solution is for product manufacturers to continue developing quieter machines, and for operators to use common sense when running leaf blowers.

"We're very aware of (the need for) noise reduction," says Tinelli. "This year, the New York Turf & Landscape Association has an education program dedicated to noise reduction."

**Manufacturer involvement**—Robin Pendergrast, spokesman for Echo, Inc., says the company has been giving dealers and end-users in more than 200 cities across the U.S. the information they need to operate blowers responsibly. The company's "Be Smart" campaign is meant to eliminate complaints caused by the inconsiderate use of leaf blowers.

According to Pendergrast, advancements in leaf-blower technology continue to result in quieter equipment.

"(Decibel) levels have gone down dramatically and will continue to do so," says Pendergrast.

Leaf blowers save time, water and money for at least three groups: the commercial user; city parks and recreation departments; and the homeowners who choose to pay to have their yards serviced. One industry estimate suggests that a clean-up job that takes six minutes with a leaf blower would take 32 minutes if done with a broom and a rake.

The leaf blower battle has been fought in some states since the late 1980s, but only seven cities have banned the tool completely.

The need for blowers during the grow-

### ELSEWHERE

**Wise water use in California, page 35**

**Audubon video is on the way, page 35**

**Embracing turf certification, page 36**

**Long list of current events, page 36**



ing season could become more pressing as more cities ban yard waste from landfills. Such a ban is under consideration in the city of Yonkers, N.Y.

Westchester County contractors can now use their leaf blowers through November, but the issue will be back in the spring. Kevin Fish, executive officer of White Plains, was quoted as saying he believes some compromise will be reached, and he promised the contractors will get to tell their side of the story.

—Terry McIver

## Use blowers responsibly

**LAKE ZURICH, Ill.**—Echo's "Be Smart" campaign includes the following tips when using leaf blowers:

- Encourage workers to use lower—and quieter—throttle speeds; a full throttle is not always necessary. Try running it at half or three-quarter throttle.
- Avoid neighboring properties, open windows and other places where dust and noise might be a nuisance.
- Develop skill at using blower accessories like misters and nozzle extensions.
- Be polite by promptly cleaning up debris.
- According to the company, some employers tell workers to shut down blowers entirely when people pass by.

—T.M.

## Secret to water conservation: intelligent use

**SACRAMENTO, Calif.**—California's landscaping industry is responding to the state's fourth-driest year on record by using innovative water-conserving techniques borrowed from high-tech experts, says the California Landscape Contractors Association (CLCA).

"As an industry, we are much more concerned and educated about water conservation than we were five years ago," says James P. Everett, CLCA president. "The secret is intelligent use of water. There are practical ways to reduce water consumption by as much as 20 to 40 percent and still protect the vitality of landscapes."

Citing necessity as the mother of invention, Everett says the landscaping industry has responded to more than seven years of drought when landscaping was targeted with mandatory water rationing and limitations on outside watering.

"Healthy lawns and greenery were a convenient symbol to attack by those who thought landscaping was a luxury we

### California landscapers accept the challenge of using less water, but keeping the grass beautiful.

could do without," says Everett. "The fact is, landscaping offers benefits, such as fire protection and pollution control, that our state needs now more than ever before."

Examples of high-tech water monitoring cited by Everett: computer software, electronic sensing devices and satellite technology.

Besides CIMIS (California Irrigation Management Information System) weather stations that predict how much to water, the newest technique is "water auditing."

Information obtained in these audits provides landscapers with feedback on the design and installation of irrigation, thus enabling them to install more efficient systems.

"We analyze the performance of a landscape irrigation system," says Patrick Marion, past-chair of CLCA's Water Management Committee. "We look to see if the sprinkler heads are maladjusted or improperly spaced. Sometimes they are tilted so they are too low to effectively spray the grass."

Landscapers are also using water measuring devices like electronic sensors that detect ground moisture and computers to analyze audit results and develop irrigation schedules.

The CLCA was also involved in drafting AB 325, the Water Conservation in Landscaping Act, which took effect in 1991. It requires that all cities and counties have a written water conservation ordinance, unless they can show that one isn't needed.

"We see the act as a tool for assisting the development of new landscape installations," says Jon Ewing, owner of Landtrends, a San Diego-based landscape contracting firm.

### Video on Signature Award will be available from N.Y. Audubon Society

**WEST BEND, Wis.**—A video to promote and inform interested organizations about the requirements and benefits of achieving "Signature Award" status from the New York Audubon Society will be available soon.

The video, being produced by Epic of Wisconsin, features interviews and wildlife footage shot at the Signature Award-winning Collier's Reserve Golf Club in Naples, Fla.

"The geography and environment of every site is different," says N.Y. Audubon Society president Ron Dodson. "This program has guidelines and principles that we both have to follow, but there's a built-in flexibility so (developers) can reach their economic desires, and we can together reach our environmental desires."

For more information, write the society at: 46 Rarick Rd., Selkirk, NY 12158.



**Epic of Wisconsin, which shot an Audubon Society video, also produces a video magazine called 'Golf & Environment.'**



William Meleen says the CTP course is difficult but fair.



## Embracing certification in 'turfgrass'

**FAULKNER, Md.**—Even after 25 years in the industry, William Meleen admits there's a lot he still doesn't know about lawn care. But, he's willing to learn.

Meleen enrolled in—and completed—the University of Georgia/Professional Lawn Care Association of America national turf certification program. It's believed he was the first ever Certified Turfgrass Professional (CTP).

"I joined the program because I know that if I'm able to tell my customers why something happens in their lawn, then they trust me even more," says Meleen, owner of Action Lawn Service, Faulkner, Md.

"Tough," is how the longtime LCO describes the year-old certification program. "You have to study for it. You won't be able to pass the tests if you don't follow the program." Meleen estimates he spent about 120 hours studying for the course's two tests, the final one he passed in July. He was pleased to score 92 on the two tests. (PLCAA arranged for Meleen to take the tests near his home at Charles County Community College.)

Meleen describes the certification program as up-to-date and comprehensive. In 14 chapters it covers everything from soils to customer communications.

Also among the first graduate CTPs were:

**Tony Atchison**, The Yard Post, Atlanta; **Victoria R. Barnhill**, Holiday Golf Club, Panama City Beach, Fla.; **John T. Booth**, Athens, Ga.; **Samuel Easley**, Easley's Lawn Care, Inc., Woodville, Ga.; **Larry Ellmaker**, Moyer & Son, Inc., Souderton, Pa.; **Murray R. Neppi**, Sym Company, Seymour, Wis.;

# GREEN INDUSTRY EVENTS

What's going on in the industry

## NOVEMBER

**8-10: Penn State Golf Turf Conference**, Nittany Lion Inn, State College, Pa. Phone: Dr. Peter Landschoot, (814) 863-1017 or Pennsylvania Turfgrass Council, (814) 863-3475.

**8-11: New York Turf & Grounds Exposition**, Rochester. Phone: NYSTA, (518) 783-1229.

**11: Landscape Maintenance Assn. Equipment & Supply Show**, West Palm Beach. Phone: (813) 680-4008.

**11-12: Golf Course Expo**, Orlando, Fla. Phone: (207) 846-0600.

**12-13: John Deere Team Championship Golf Tournament**, La Quinta, Calif. Phone: by invitation only.

**13-16: Carolinas Golf Course Superintendents Conference & Show**, Myrtle Beach (S.C.) Hilton. Phone: (800) 476-4272.

**13-17: Green Industry Expo** and annual conferences for **Professional Lawn Care Association of America**, **Associated Landscape Contractors of America** and **Professional Grounds Management Society**, St. Louis, Mo. Phone: PLCAA, (404) 977-5222; ALCA, (703) 620-6363; PGMS, (410) 584-9754.

**15: South Florida Chapter, STMA meeting**, Mark Light Stadium, Miami. Phone: John Mascaro, (305) 938-7477.

**16-18: Composting Council Annual Conference**, Washington, D.C. Phone: The Composting Council, (703) 739-2401.

**17: California Certified Nursery Professional Exam**, Anaheim. Phone: C.A.N., (916) 567-0200.

**17-19: Tree Care Industry Expo**, Philadelphia, Pa. Phone: National Arborist Assn., (603) 673-3311.

**17-20: International Golf Show**, Madrid, Spain. Phone: (011) 34-1-350-1564.

**18-20: Golf Summit '94**, Scottsdale, Ariz. Phone: National Golf Foundation, (407) 744-6006.

**19: Women in Horticulture Conference**

"Profiting from Integrity," Doubletree Suites, Seattle. Phone: (206) 525-7844 or (206) 937-2815.

**22: Alliance for Environmental Concerns Annual Meeting**. Phone: AEC, (201) 595-7172.

**28-30: North Central Turfgrass Exposition**, St. Charles, Ill. Phone: Illinois Turfgrass Assn., (312) 616-0800.

**28-30: Southern Turfgrass Assn. Conference and Show**, Memphis, Tenn. Phone: (901) 749-5885.

**29: "Practical Approaches for Effective Erosion and Sediment Control" Seminar**, Orlando, Fla. Phone: International Erosion Control Association, (303) 879-3010.

**29: Minnesota Sports Turf Managers Association Turf Seminar**. Phone: Tom Rudberg, (612) 962-6545.

**29-Dec. 1: Rocky Mountain Turf Conference & Trade Show**, Colorado Convention Center, Denver. Phone: (303) 688-3440.

**29-Dec. 1: Golf Course Europe**, Paris, France. Phone: (510) 526-6922; (510) 526-5387.

**29-Dec. 1: New Jersey Turfgrass Expo**, Taj Mahal Casino, Atlantic City. Phone: (908) 821-7134.

## DECEMBER

**6-9: Ohio Turfgrass Foundation Conference & Trade Show**, Columbus, Ohio. Phone: (614) 261-6750.

**6-8: Georgia Turfgrass Conference & Show**, College Park. Phone: (404) 975-4123.

**7: Massachusetts Association of Lawn Care Professionals Annual Meeting**, Concord, Mass. Phone: (508) 287-0127.

**13: PLCAA Winter Workshop**, Madison, Wis. Phone: PLCAA, (800) 458-3466.

**14: PLCAA Winter Workshop**, Pittsburgh, Pa. Phone: PLCAA, (800) 458-3466.

**15: PLCAA Winter Workshop**, Scranton, Pa. Phone: PLCAA, (800) 458-3466.

**Thomas M. O'Kane**, Professional Grounds, Inc., Lorton, Va.; **Carl Olson**, Crest Agrow Products, Long Beach, Ca.; **Lou Wierichs, Jr.**, Pro-X Systems, Fox Cities and Green Bay, Wis.

PLCAA introduced the home-study certification program at the 1993 PLCAA Conference in Baltimore. Since then over 300 have enrolled in the correspondence course.

The course is designed for green industry professionals including, but not limited to, lawn care pros, landscapers, golf superintendents, and athletic field and park managers. It meets the pesticide recertification credits in 25 states. Five other states are reviewing the course for credits.

For more information about the CTP

Program, stop by the PLCAA Customer Service Booth #1026 at the 1994 GIE in St. Louis. Or contact PLCAA at 1000 Johnson Ferry Road, NE, Suite C-135, Marietta, Ga. 30068. (800) 458-3466.

—Ron Hall

## CORRECTION

Due to a production-related error, the photographs of Tom Mascaro and Eberhard Steiniger on page 39 of our October issue were reversed. We apologize for any inconveniences caused by this error.



# INFO CENTER

Useful literature and videos for the green industry

**CONTROL WEEDS...** "Turf Weeds and Their Control" by Dr. A.J. Turgeon describes new chemistries and techniques for herbicide application, weed taxonomy, ecology and control. Priced at \$60, the book is available from CSSA, ASA headquarters Office; Attn. Book Order Dept., 677 South Segoe Rd., Madison, WI 53711-1086.

**TREE CARE SAFETY...** The new Tailgate Safety Program is now available from the National Arborist Association. The study program contains 40 lessons in accident prevention, most taking less than 20 minutes to administer. The information contained in each lesson can be put to use immediately. Contact the National Arborist Association, P.O. Box 1094, Amherst, NH 03031-1094; (800) 733-2622.

**ALCA PUBS...** The Associated Landscape

Contractors of America has a revised ALCA Publication Catalog now available. The free catalog includes descriptions of books on managing finances to worker safety and marketing. Contact ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091; (703) 620-6363.

**ORDER NOW!** "The Pesticide Manual" is available from The Royal Society of Chemistry and the British Crop Protection Council in November. Much data has been revised for this 10th edition. Cost is \$165. Contact Gill Wood at (800) 473-9234.

**BETTER PUBLICITY...** The Communication Skills Institute offers the publication, "Take the Mystery Out of Media: Make Your Publicity Newsworthy," for small businesses seeking better relations with the media. Written by Lorraine B. Kingdon, the book is available from the Com-

munication Skills Institute for \$14.95. Contact CSI, 7049 E. Tanque Verde, Suite 302, Tucson, AZ 85715.

**GARDEN GUIDES...** Ironwood Press publishes a variety of guides to gardening in the West. Titles include: *The Low-Water Flower Gardener*; *How to Grow The Wildflowers*; and *Beautiful Gardens*. Prices under \$15, these large-size paperbacks are beautifully illustrated and clearly explained. Contact: Ironwood Press, 2968 West Ina Rd. #285, Tucson, AZ 85741.

**TOOL CATALOG...** Stanley Hydraulic Tools has issued a new edition of its hydraulic hand-held tool catalog. It features photographs and descriptions, performance and operational specifications and available accessories. Contact Stanley Hydraulic Tools, 3810 SE Naef Rd., Milwaukee, OR 97267; (503) 659-5660.

# RESOURCES & REFERENCES

## For Landscape Professionals

### New & Best-Selling Books

#### Turf

- Turf Managers' Handbook**  
by W.H. Daniel & R.P. Freeborg  
437 pages **LSM-BK-110**.....\$39.95
- Controlling Turfgrass Pests**  
by Shurtleff, Fermanian & Randell  
449 pages **LSM-BK-220**.....\$56.95
- Turf Management Handbook**  
by Howard Sprague  
255 pages **LSM-BK-620**.....\$26.60
- Turfgrass: Science and Culture**  
by James Beard  
658 pages **LSM-BK-630**.....\$62.95

- Turf Irrigation Manual**  
by James Watkins  
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- 1993 Turf and Ornamental Chemicals Reference**  
930 pages **LSM-BK-645**.....\$110.00
- Compendium of Turfgrass Diseases**  
by Richard Smiley, Peter Dernoeden & Bruce Clarke  
128 pages **LSM-BK-650**.....\$30.00
- Landscape Management's Pocket Seed Guide**  
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by Warren Johnson & Howard Lyon  
560 pages **LSM-BK-690**.....\$52.50
- The Shrub Identification Book**  
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- The Tree Identification Book**  
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272 pages **LSM-BK-750**.....\$17.95

- Diseases and Pests of Ornamental Plants**  
by Pascal Pirone  
566 pages **LSM-BK-410**.....\$58.00
- Tree Maintenance**  
by P.P. Pirone  
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- Golf Course Management and Construction: Environmental Issues**  
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# JOB TALK

## Recycling vegetation in Alaskan ski country

**Alyeska Resort, Sasaki Associates and Evergreen Landscaping do it the old-fashioned way: the hard way, but the right way.**

by Leslee Jaquette

■ When Alyeska Resort invested more than \$1 million in the largest vegetation recycling and replanting landscape project in the state, even the moose and deer perked up their antlers.

In an effort to use the resources at hand, management at Alaska's premier ski resort designed an aggressive, multidimensional plan.

Sasaki Associates, which designed the landscape, wanted to use mountain heather removed during trail work to fill in areas affected by the construction of a tram tower. A dramatic helicopter transplanting effort was the climax of that project.

To "marry" 27 acres of new terrain with other parcels, erosion difficulties and summer aesthetics, Alyeska's mountain project manager Bob McBride teamed up with Evergreen Landscaping of nearby Anchorage.

According to McBride, the contract called for Evergreen's 25 workers to harvest and transplant vegetation in a 24-hour period.

To decrease plant shock and give the plants time to stabilize before winter, mid-August was targeted.

Evergreen's workers handled the existing heather like sod, shrink-wrapping and flying 36,000 sq. ft. of it to 2,700 feet elevation within two hours. Four hundred-fifty yards of topsoil were also transported in giant hoppers by tram and then by helicopter, where it was all used as landscaping around the tram station and support tower.

Helicopter costs ran \$800 per hour for 20 hours, but McBride

maintains, "If you make the investment, you need to do it right."

Other landscape issues were handled with equal attention to ecological sensitivity.

More than 13,500 trees and plants were brought to a nursery in the new Alyeska Prince Hotel parking lot, to begin getting acclimatized to their new home, 240 feet above sea level. The 33 varieties included white spruce, Colorado green spruce and quaking aspen. A sophisticated watering system, supplemented by watering trucks, was needed to keep the plants alive through Alaska's driest summer on record.

The nursery had a complete plastic pipe irrigation system on a gravel base. Because some of the plants were fairly large, McBride's staff set up risers with overhead sprinklers to simulate nature.

An extensive drainage system also had to be built because of torrential rains that can result in up to one inch of water per hour. Starting in May, 1993, drains were added to individual trees and shrub beds bringing the total number of drains to about 8,000.

Careful consideration, too, was given to equipment that would minimize impact to surrounding vegetation. Using lightweight baby backhoes with rubber tires, McBride's team dug narrow trenches for the perforated pipe and gravel curtain. Architects felt the need, McBride says, to take every precaution to preserve neighboring 200-year-old trees while planting the new ones.

To further capitalize on hardy, native plant species, McBride also bought a 500-gallon hydroseeder to plant \$100-a-pound alpine bluejoint grass and wildflowers. "We must harvest our own seeds," McBride observes. "Besides, natural seed is the healthiest. The key is to know when to harvest the seed and how to store it."

—Leslee Jaquette is a freelance writer based in Washington State. She is a frequent contributor to LM.



Topsoil and Alaskan mountain heather were transported both by tram (left) and by helicopter (right) to the area around a new tram station and support towers where the vegetation was to be transplanted.

(Photos by Tom Evans of Evergreen Landscaping)



# GREEN INDUSTRY SHOWCASE

## Weather station compact, stores data regularly

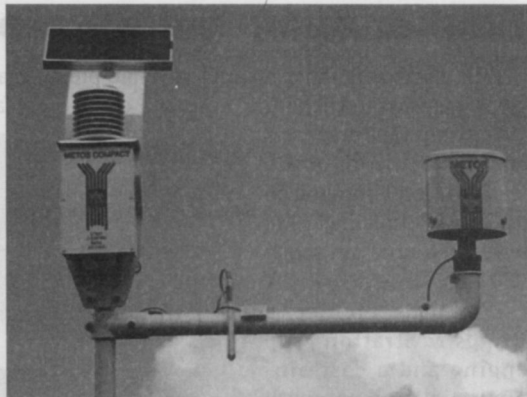
The Metos-Compact weather station reports air temperature, relative humidity, rainfall and soil temperature.

A photocell and two leaf wetness sensors are part of the station, as well as a solar panel to allow continuous operation; a serial communications port for data transfer to personal computers by direct line; telephone or radio modem; and comprehensive communication and data management software.

Metos automatically reads all sensors every 12 minutes and stores the data for retrieval by the user any time through any portable or desktop computer.

A special introductory price of \$2495 includes all hardware and software. The Metos-Compact and other Metos weather stations are available from Pest Management Supply, Inc. of Hadley, Mass.

Circle No. 238 on Reader Inquiry Card



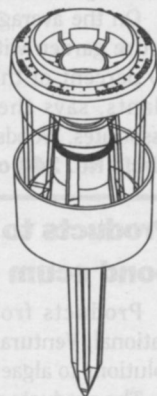
## Rain gauge tells when water has evaporated

The Moisture Smart watering gauge is an evaporimeter which measures water evaporation to determine when to water and the right amount of water needed for plants and turfgrass.

The gauge measures net evapotranspiration rate and indicates the net amount of water required to replace evaporated moisture.

The gauge is very economically priced, and is appropriate for turf and landscape, sun and shade, and all types of sprinklers.

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## Sod cutter: great traction, easy handling

Ryan's Jr. Sod Cutter has been engineered for maximum traction and self-propelled action.

Ninety-five percent of its weight is on the knobby tread drive wheels, for good balance, easy handling and responsive turning.

Powered by a 7 hp engine, the sod cutter cuts up to 135 feet of sod per minute, up to 2.5 inches deep, at widths of either 12 or 18 inches.

The unit weighs 135 pounds.

The Tote Trailer is available for easy transport.

Circle No. 239 on Reader Inquiry Card



## New engines are quick starters, smooth operators

The Command 25 hp vertical shaft engine from Kohler Co. features Kohler's Power-Bore cylinders, engineered to last longer, provide more power, conserve oil and reduce exhaust emissions.

Sound reduction is also a plus, thanks to computer-designed and balanced crankshafts and cams; first-order forces are eliminated and engine vibrations reduced.

The engine weighs 94 pounds, and features Smart-Choke and Smart-Spark for quick starts in all kinds of weather.

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## Root systems establish faster, turf more tolerant

Roots Dry Formula (2-4-2) fertilizer for plantings and stressed lawns contains a special blend of natural nutrients, growth enhancers and soil conditioners.

The Roots Dry Formula establishes a deep, hardy root system to ensure that all new plantings get off to a healthy, vigorous start. Besides increasing water and nutrient uptake, Roots Dry Formula stimulates beneficial microbial activity in the soil.

In turf, the product's positive effect on heat and drought tolerance helps stressed

lawns survive the summer, without pushing top growth. Newly-installed sod knits down faster, and new seedings and overseedings also establish faster, according to Roots.

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## Seaweed biostimulant gives 3-D approach to turf care

3D is a concentrated turfgrass biostimulant derived from pure, cold process seaweed and fortified with proprietary humic acid and plant growth nutrients.

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ing with foliar enhancement, physiological integrity and foundation fortification, even under adverse environments.

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## Soap-based repellent keeps the deer away from plants

Bye Deer is advertised as the first and only soap-based deer repellent registered with the EPA.

The Bye Deer sachets protect plants and shrubs by diverting the animals away from the plants without changing their roaming patterns.

They work best two to four to a shrub,



# PRODUCT REVIEW

depending on the size of the shrub. When staking beds of flowers, set the sachets at bud level randomly throughout the bed and continually raise the sachets as the flowers grow.

On the average, the cost of staking an entire garden with Bye Deer amounts to 10 percent of the purchase price of the plants, says the company, Stoll Road Associates, Woodstock, N.Y.

**Circle No. 244 on Reader Inquiry Card**

## Products to prevent or cure pond scum and algae

Products from Enviro-Reps International, Ventura, Calif., are developed as solutions to algae in ponds and lakes.

The products are new and effective and safe ways of preventing and controlling polluted water. They are available as curatives or preventives.

BRF-20S is a soil inoculant and fertilizer that will not supply nutrients to the water, but supplies vital nutrients to the soil.

"Tint-It-Blue" is developed to block ultra-violet rays. Ponds and lakes take on a light sky-blue tint.

"Rapid-Klear" is a coagulant that causes the green gunk and other suspended particles to drop to the bottom.

"Super-Bugs" is a special formulation of bacteria and enzymes which feed on dead organic matter.

**Circle No. 245 on Reader Inquiry Card**

## Greens ventilator powered by irrigation system water

Aeolus, Inc., is the exclusive dealer of Ramfan Corp.'s "Turboventilator" WF-20.

The ventilator is water powered, and uses water from the irrigation system to drive the turbine.

The unit will also mist the greens as well as cool them with air.

**Circle No. 246 on Reader Inquiry Card**

**Landscape  
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## Bunker pump bails water at 280 gpm

The Bunker Pumper floating portable pump, manufactured by Otterbine, is an efficient, easy method of getting water out of your way fast. This self-priming pump removes water from sand traps and any other low-lying area.

Capable of starting in as little as three inches of water, the unit can pump 280 gpm.

Features include a Briggs & Stratton 8 hp engine and a cast aluminum alloy pump with built-in suction screen and skids. The pump, weighing only 85 pounds, is easy to handle.

**Circle No. 247 on  
Reader Inquiry Card**



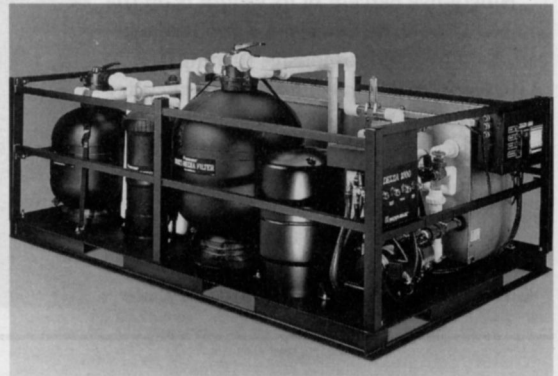
## Filtration system treats wash-water for re-use

Landa, Inc., has manufactured a full line of environmental equipment for golf courses, including a closed-loop wash-water recycling system.

The Delta-1000GC is a filtration system specifically designed for recycling wash water with heavier-than-usual loads of grass clippings and pesticides. The unit treats wash water at a rate of up to 10 gallons per minute (gpm).

Other products from Landa include environmentally safe chemical mixing and loading sheds, fiberglass collection pits, catch basins and sump pumps, and mobil grass and sludge carts for easy disposal of debris.

**Circle No. 248 on Reader  
Inquiry Card**



## Snow plowing easier with heavy-duty blade

The Myer Snow blade developed by Excel Industries, Inc., works off an Electro-Touch Control System, for easy, positive control over the snow blade motion and angle.

Among its other convenient features, illuminated buttons make it easy to raise, lower and angle the blade.

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Inquiry Card**





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## HELP WANTED

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**COME JOIN A LEADER!** Start a career with one of Kansas City's premier landscaping and nursery companies. Management, sales, design and production positions available for motivated and quality oriented individuals. Both entry-level and experienced candidates are encouraged to apply. Bachelor's degree preferred. Great advancement potential. Benefits provided. If interested please call Tracy Strohm or send resume to: Hermes Landscaping, 12421 Santa Fe Trail Drive, Lenexa, KS 66215. (913)888-2400. EOE 11/94

**Searching for the right employee? Time for a new position?** Contact **Florapersonnel, Inc.**, international search and placement firm for the landscape, irrigation industries and allied trades. **Confidential. Fee paid by employer.** Florapersonnel, Inc., 2180 W. 434, Suite 6152, Longwood, FL 32779-5008. Phone: (407)682-5151 Fax: (407)682-2318. TF

**PRODUCTION/OPERATIONS MANAGER:** One of Atlanta's leading full service landscape management companies has an immediate need for experienced commercial maintenance managers. Environmental Design Group was established in 1978 and is one of the largest firms in the region. We seek a candidate with a great eye for detail and strong organizational and leadership skills. We provide a stable environment, formal training and competitive salary and benefits. Please fax (404)242-1745 or send resume to EDG, Huamn Resources Dept., P.O. Box 1302, Norcross, GA 30091. EOE/Drug Free Workplace. 11/94

**KEY LEADERSHIP POSITION:** Atlanta based Lifescapes, Inc. is searching for a team oriented grounds maintenance production manager. Creative and aggressive decision making and an understanding of *Total Quality Principles* a must. We seek someone with a college degree, goal orientation, and experience with leading people. Our award winning design/build firm offers challenging career opportunities with excellent pay, incentive program, retirement plan, and many other benefits in a positive, growth oriented corporate culture. Send resume in confidence to: Bret Bowlin, Lifescapes, Inc., 6202 Hickory Flat Highway, Canton, Georgia 30115. 11/94

**OPERATIONS MANAGER:** St. Louis based Lawn/Landscape Maintenance Company has opening for individual with 3 years experience managing department w/over \$1.5M sales. Must possess strong agronomic knowledge, excellent supervisory skills and customer service abilities. Send resume to: PO Box 3208, St. Louis, MO 63130. EOE. Drug Free Workplace. 11/94

Key positions available with an expanding full-service award winning landscape operation in Cleveland, Ohio. Designer, Salesperson, Supervisor and Branch Manager opportunities. Send resume to: Yardmaster, Inc., Landscape Architects & Contractors, 1447 North Ridge Road, Painesville, Ohio 44077, Phone (216)951-9100, Fax (216)357-1624. 12/94

**Turf Specialist - Dept of Intercollegiate Athletics and Recreational Sports:** Salary: \$37,800-\$56,700. Maintain and oversee maintenance of athletic and recreation fields. 4-5 years experience in Sports Turf Management or golf course management. Bachelor's Degree in turf grass management, horticulture agronomy or related field preferred. Ability to work in chaotic & pressured environment. Ability to communicate effectively in a diverse environment. Strong supervisory skills. Pesticide application and Advisory license preferred. Apply at or send application/resume to: University of California at Berkeley, 2200 University Avenue Rm 7G, University of California, Berkeley 94720, Job# 08-109-10/MO. 11/94

**MAINTENANCE COORDINATOR:** Northern IL Design/build Co. seeking hands on person to coordinate all aspects of landscape maintenance dept. Hort. degree or similar a must & working knowledge of all maintenance operations, disease & pest control. Send resume: Maintenance Coordinator, Van Zelst, Inc. P.O. Box 250, Wadsworth, IL, (708)623-3580. 11/94

**Lawn Technician and Salesperson** - join fast growing company in start-up of a new outlet in Central N.J. College Town. Must be self starter, motivated, sales oriented and field experienced. \$40k plus full benefits. Send resume to Mr. Bellis, P.O. Box 158, Mt. Freedom, N.J. 07970. 11/94

## WANTED

**WANTED:** Old SPYDER forklifts and/or forklift frames. Mobile Lift Parts, Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. (800)397-7509. 12/94

## EQUIPMENT FOR SALE

**REINCO HYDROGRASSERS** and power mulchers in stock. Opdyke Inc., (Philadelphia Area) 215-721-4444. 12/94

**BUCKET TRUCKS:** Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers: New Morbark Disc and Drum Style. New Rayco Stump grinders. Best prices anywhere. Used Chippers: Asplundh, Morbark, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as-is or reconditioned. We also buy your surplus equipment. Opdyke's, Hatfield (Philadelphia Area). 215-721-4444. 12/94

**FINN HYDROSEEDERS AND MULCH BLOWERS-NEW AND USED LARGE PARTS INVENTORY-SAME DAY SERVICE.** (BALTIMORE AREA) **WOLBERT & MASTER, INC.** 410-335-9300. 12/94

**SPYDERS-** New/Used/Rebuilt. Full line of replacement parts and update kits. Kubota, Ruggerini, and Kohler engines & parts. Nichols-Fairfield torque hubs. We repair and rebuild Spyder hydraulic pumps and motors. **FAST SERVICE.** Call or write: Mobile Lift Parts Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. (800)397-7509, FAX (815)455-7366. 12/94

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**COMPLETE NURSERY, RETAIL SALES and MAINTENANCE BUSINESS** in PIEDMONT, NORTH CAROLINA...HIGH GROWTH RETIREMENT and RESORT AREA. On busy highway. Thriving and growing. Owner will stay for transition. Call John McKeithen, Gouger, O'Neal & Saunders, Inc., 800-672-2228 or 910-692-2635. 11/94

**SUCCESSFUL SOUTH FL LANDSCAPE CO. & RETAIL NURSERY** Gross \$600,000+. Equipment & Real Estate incl. \$425,000. Reply to LM Box 514. TF

## FOR SALE

**BUCKET TRUCK:** Hi Ranger 65', 57', 50'. Sky-workers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 800-597-8283. 12/94

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FAX NUMBER ( \_\_\_\_\_ ) \_\_\_\_\_

HAVE A SALES REP CALL ME 18  (A)

101	118	135	152	169	186	203	220	237	254	271	288	305	322
102	119	136	153	170	187	204	221	238	255	272	289	306	323
103	120	137	154	171	188	205	222	239	256	273	290	307	324
104	121	138	155	172	189	206	223	240	257	274	291	308	325
105	122	139	156	173	190	207	224	241	258	275	292	309	326
106	123	140	157	174	191	208	225	242	259	276	293	310	327
107	124	141	158	175	192	209	226	243	260	277	294	311	328
108	125	142	159	176	193	210	227	244	261	278	295	312	329
109	126	143	160	177	194	211	228	245	262	279	296	313	330
110	127	144	161	178	195	212	229	246	263	280	297	314	331
111	128	145	162	179	196	213	230	247	264	281	298	315	332
112	129	146	163	180	197	214	231	248	265	282	299	316	333
113	130	147	164	181	198	215	232	249	266	283	300	317	334
114	131	148	165	182	199	216	233	250	267	284	301	318	335
115	132	149	166	183	200	217	234	251	268	285	302	319	336
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

NOVEMBER 1994  
This card is void  
after January 15, 1995

#### 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) \_\_\_\_\_

I would like to receive (continue receiving)

LANDSCAPE MANAGEMENT each month: YES  NO

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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TITLE \_\_\_\_\_  
FIRM \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TELEPHONE ( \_\_\_\_\_ ) \_\_\_\_\_

FAX NUMBER ( \_\_\_\_\_ ) \_\_\_\_\_

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110	127	144	161	178	195	212	229	246	263	280	297	314	331
111	128	145	162	179	196	213	230	247	264	281	298	315	332
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113	130	147	164	181	198	215	232	249	266	283	300	317	334
114	131	148	165	182	199	216	233	250	267	284	301	318	335
115	132	149	166	183	200	217	234	251	268	285	302	319	336
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117	134	151	168	185	202	219	236	253	270	287	304	321	338

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17  50 OTHER TITLED AND NON-TITLED PERSONNEL (specify) \_\_\_\_\_

I would like to receive (continue receiving)

LANDSCAPE MANAGEMENT each month: YES  NO

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



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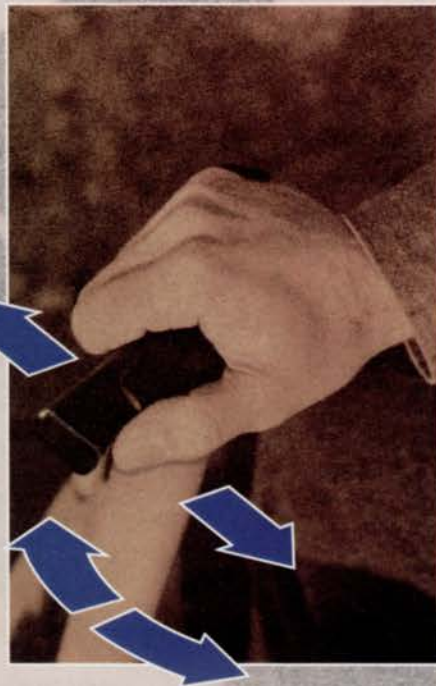
## Unmatched maneuverability

We've been telling you for more than 20 years that dual path hydrostatic steering is the most maneuverable way to steer a mower. Obviously, somebody was listening because today nearly all of our competitors are vying for the lever steer market with their own versions.

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**Excellent Dark Color:** When compared to other tall fescues, Rebel Jr provides the deep, dark color preferred by turf professionals.



The darker color of Rebel Jr is apparent in these test plots comparing Rebel Jr to other tall fescues.

**Less Clippings:** The lower, slower growth rate of Rebel Jr results in easier mowing and 30% less clippings. However, it is proven to have an advantage over the current, much-talked-about "extreme dwarfs"; as Rebel Jr does not grow so slowly that the plant's rate of establishment, vigor, tolerance to traffic and stress, or recuperative qualities are affected. The moderately slow growth rate of Rebel Jr is a distinct advantage over that of the extreme dwarf varieties.

**Rate of Establishment:** While Rebel Jr displays moderately slow growth, its rate of establishment is faster than the extreme dwarf varieties such as Bonsai.



REBEL JR. FINELAWN 5 GL



REBEL JR. SHENANDOAH

The dense, slower growth of Rebel Jr can be seen one week after mowing.

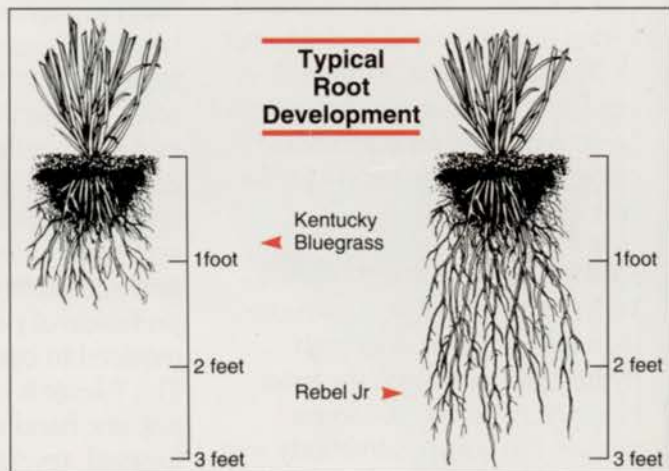
**Top Performance with Less Maintenance:** Rebel Jr from seed or sod is adaptable to full sun or moderate shade. It needs only low to medium maintenance and uses 25% less fertilizer than Kentucky bluegrass.



Rebel Jr will give excellent performance in sun or shade. It's ideal for use in hard-to-maintain areas such as golf course green banks, slopes and bunker faces.



**Improved Drought Tolerance:** A deep, extensive root system allows Rebel Jr to display excellent drought tolerance.



### Recommended Seed Mixtures for Sun or Shade

#### HOME LAWNS

- 100% Rebel Jr Tall Fescue
- or
- 90% Rebel Jr Tall Fescue
- 10% Baron or Nassau Kentucky Bluegrass
- or
- 34% Rebel Jr Tall Fescue
- 33% Rebel II Tall Fescue
- 33% Tribute Tall Fescue

#### GOLF COURSE ROUGHS

- 90% Rebel Jr Tall Fescue
- 10% Georgetown Kentucky Bluegrass
- or
- 30% Rebel Jr Tall Fescue
- 30% Rebel II Tall Fescue
- 20% Tribute Tall Fescue
- 10% Palmer II Perennial Ryegrass
- 10% Georgetown Kentucky Bluegrass

#### GOLF COURSE BUNKERS

- Rebel Jr Tall Fescue Sod
- or
- Rebel Jr, Rebel II and Tribute Tall Fescue Sod

#### ATHLETIC FIELDS

- 80% Rebel Jr Tall Fescue
- 10% Palmer II Perennial Ryegrass
- 10% Baron or Nassau Kentucky Bluegrass
- or
- 30% Rebel Jr Tall Fescue
- 30% Rebel II Tall Fescue
- 20% Tribute Tall Fescue
- 10% Palmer II Perennial Ryegrass
- 10% Baron or Nassau Kentucky Bluegrass

#### UTILITY TURF

- 100% Rebel Jr Tall Fescue
- or
- 34% Rebel Jr Tall Fescue
- 33% Rebel II Tall Fescue
- 33% Tribute Tall Fescue

**Use Rebel Jr wherever a tall fescue is suitable. You'll get dark color, moderately slow growth and top performance in sun or shade.**



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