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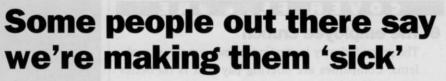
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RON HALL, SENIOR EDITOR

Multiple chemical sensitivity (MCS) is something we all must continue to monitor.

AS WE SEE IT

People who claim to suffer from MCS say that exposure to chemicals causes them terrible health problems. Just about any man-made chemical can do it, they say-newspaper ink, solvents, deodorizers, hair spray, aftershave included.

Whenever the topic of MCS arises, a discussion of pesticides always follows.

The two are linked. In this context, the words "pesticides" and "poisons" are often used interchangeably. To MCS sufferers, careless and/or uncaring applicators can rightly be described as poisoners. That's how we fit into this equation, even if unwillingly.

Their message to all pesticide-using professionals is clear: stay away. Far away.

These sufferers believe that MCS is initially triggered by one overwhelming exposure to a particular chemical. Or, in some individuals, to a long term and persistent exposure to a particular chemical.

Whatever the cause, MCS victims (that's how they describe themselves) are absolutely convinced that the exposure has so traumatized their bodies that even the most minute presence of chemicals in their environment causes them extreme discomfort.

They often go to incredible lengths to avoid exposure to chemicals. They may remove all chemical products from their homes. They may wear gas masks when they leave their homes. Sometimes they even relocate themselves and their families to the country to escape whatever chemicals their neighbors use.

These victims say MCS robs them of their health; it destroys their careers; it sometimes even denies them the association of friends.

Their lives seem to be consumed with the fear of chemicals, and any illnesses that result from contact with chemicals.

How many people suffer-or claim to suffer-from MCS?

Depending on who's talking, the number can vary from thousands to as many as 10 million people nationwide.

Some belong to community support groups. There may be as many as 20 people in such groups.

It's unlikely that any city of any size in the nation doesn't have, at least, a few people who believe that at least some of their health problems are caused or worsened by exposure to chemicals. But the term "multiple chemical sensitivity" is just now gaining more usage.

The mainstream medical community doesn't seem to know what to do about MCS. In fact, the number of physicians recognizing it as a problem is still small. But, like MCS sufferers themselves, this number will probably grow.

We, as professional chemical users. don't know what to do about MCS either.

Certainly, we can't say that it doesn't exist. That it's so much bunk. That the people who claim to suffer from it, really don't.

We're not medical experts. How can we know what they're feeling?

Mostly, it seems, we must do everything we can to keep it from becoming a bigger problem, either for ourselves and our businesses, but particularly for those who say they are its victims.

Kon Hall



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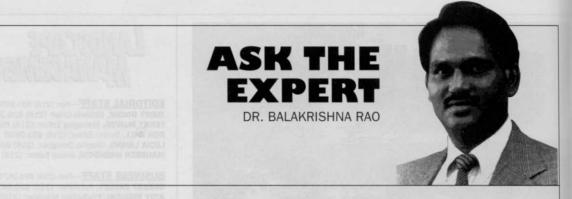
LANDSCAPE MANAGEMENT (ISSN 0894-1254) is published month-ly by Advanstar Communications, Inc. Corporate and editorial offices: 7500 Old Oak Blvd., Cleveland, OH 44130. Advertising, accounting, advertising production and circulation offices: 131 West First St., Duluth, MN 55802; 1333 N.W. Norcross, Seattle, WA 98177. Subscription rates: one year, \$39, two years \$58 in the U.S.; one year \$66, two years \$99 in Canada. All other countries: one year \$130, two years \$195. Current issue single copies (pre-paid only): \$4 in the U.S.; \$7 in Canada; \$12 elsewhere; add \$3.50 per order for shipping and handling, Back issues, if available, \$10; add \$3.50 per order for shipping and handling (pre-paid orders only). Office of publication: Advanstar Communications, Inc., 131 W. First St., Duluth, MN 55802. Second class postage paid at Duluth, Minnesota 55806 and additional mailing offices.

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POSTMASTER: Send address changes to Landscape Management, P.O. Box 6198, Duluth, MN 55806.

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#### Selectively managing woody plants

Problem: Last year we cleared several acres of land along a river bank and planted it with grass. Is there any herbicide that can be used to prevent the reoccurrence of woody plants from along river banks without injuring the grass?

**Solution:** Since the wooded area has been cleared and grass has been planted, consider maintaining the area as a low maintenance grass area with proper mowing and broadleaf weed control as needed. Broadleaf weed herbicides, used in the lawn maintenance program, might be beneficial. Read the product label to see whether that product can be used along river banks. Mechanical means, such as proper mowing, may help manage some of the plants because once the plant's terminal bud is removed it may fail to grow further.

If the woody plants or branches are close to—or hanging over—the water, consider using herbicides that contain glyphosate, such as Accord or Rodeo. These herbicides can be applied directly over the plants and can be applied over water. These are non-selective herbicides, and will kill the grass. Reports indicate that glyphosate can be applied using a backpack and spot-treating as needed using a "low volume" application technique. With this method, the herbicide products do not have to be applied over the entire plant. The objective is to apply a five percent concentration of mix, quickly, over the the plant foliage enough to translocate and help manage the undesirable vegetation. Be careful not to get this product on the grass.

A wick-type applicator can treat woody growth selectively. It could be time-consuming, but it should manage the undesirable vegetation very well.

If the woody plants or branches are not close to or hanging over the water, you could consider using Krenite herbicide; but it should *not* contact the water. Apply from June to October.

#### Cold weather injury tough to prevent

Problem: Last year, soon after winter, a number of Quanzon cherry trees showed severe injury from exposure to low temperature. Affected trees had extensive bark splitting and/or peeled bark. In some instances, the bark was peeled all around the stem. Is there an antidessicant (drying agent) or protective wrap we can use to prevent this from happening again? (Michigan)

**Solution:** Last year, sub-zero temperatures in many parts of the U.S. caused frost crack on a number of plants. Generally, evergreens are less subject to cracking than are deciduous trees. Plants such as linden, oak, elm, London plane, horse chestnut, willow, apple, beech, crabapple, golden rain tree, walnut and many other thin barked trees are commonly sensitive to frost crack.

The problem with cherry may be due to sun scald, frost canker and/or cup shakes resulting from exposure to low temperatures. The following explanation from an arboriculture text by Dr. R.W. Harris might be helpful in understanding the problem.: "On sunny days in winter, a tree trunk may be warmed as much as  $10^{\circ}$  C ( $18^{\circ}$  F) above air temperature. If a trunk or branch so warmed becomes shaded by a dense cloud or opaque object, the bark temperature may drop quickly to a critical level, causing injury or death to the bark and cambium. This is generally called *sun scald*, even though it is actually a freezing injury. It has also been called a *frost canker*.

"Wide fluctuations above and below and freezing temperatures of wood may also cause *cup shakes*, or separations of the wood along one or more annual rings. These occur when a frozen trunk warms quickly upon exposure to the sun. The warmed outer wood expands and separates from the inner wood, which has expanded less rapidly. Cup shakes are not evident until the trunk is cut or breaks, but cause serious defects in lumber and may weaken a living tree. Longitudinal frost cracks usually occur in the bark and wood parallel to the grain and extend to the center of the trunk."

Generally, there is no known practical solution to protect the sensitive plants from these injuries. Some researchers believe that frost cracks can be prevented by preventing wounds, making proper cuts and preventing root injuries. Others believe that wounds may be a factor in frost cracks, but are not the primary cause.

Reports indicate that shading a trunk or painting it with white latex exterior paint can moderate temperature extremes and may reduce frost crack, sun scald and cup shakes. Another option may be to paint the trunk using whitewash (calcium carbonate and water) in early fall. The drawback with painting is that in the spring the trunk may remain white and may not be aesthetically pleasing.

In my opinion, it is better to install a burlap barrier 8 to 10 inches away from the trunks of cherry trees. This can be done by placing four wooden stakes about 10 inches away from trunks and then wrapping them with burlap. This 8 to 10 inches of air space is needed to maintain constant temperature and help prevent the injury. Other wrapping materials such as tubes, aluminum, craft wraps or white cloth do not seem to protect against frost cracks.

Generally, plants going to winter, which are under some sort of stress, are more likely to be affected by low temperature exposure. Therefore, follow proper watering, mulching, fertilizing, pruning and pest management as needed to help improve plant health.

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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Hydraulic Pump Capacity, (gpm)	12.7	17.3
Loader Lift Capacity, (lbs)	926	1,653
Loader Breakout Force, (lbs)	1,543	2,744
Loader Maximum Lift Height, (in)	85″	105.5″
Backhoe Digging Depth, (in)	92.9″	111.3″

#### **COVER STORY**

#### by Ed and Aaron Wandtke

■ The green industry, like most other service industries, is increasingly feeling the strain for better, more professional employees. And many of you are suffering through an inability to attract valuable employees.

If you finally discover a promising employee, retaining him or her for any period of time often becomes a challenge. Business owners continually claim that most promising employees never stay

ere

with a company more than two years. Why are employees leaving? Where are they going? What criteria should you evaluate future employees on?

**Packing their bags**—The two most common reasons for leaving a company are money and job security. Clearly, the old-fashioned six-to-dark worker has disappeared; today's employee wants more money for working less.

Unfortunately, the green industry is creating its own problems. Today, companies are offering pay for seasonal work that is no better than a fast food restaurant. They are discovering that employees want the opportunity to make money the entire year rather than only during the growing season. Offering lower pay and seasonal employment are proven ways to limit the pool for professional and reliable employees.

The minimum wage—now being discussed in the halls of Congress appears to be headed for a change in the next year or two. Here's a general rule of thumb: if you are not paying twice the minimum wage, then perks must be used as an inducement to retain good employees. Offering additional money through incentives can be an opportunity for personnel to earn increased pay. If, on the other hand, higher wages are already being offered, then perks will be the alternative to keep payroll costs reasonable.

Not just a job—Good employees often leave because of limited security, overlong hours, or lack of advancement opportunities. Employees are looking at green industry employers for a career, not just a job. Promising employees invariably seek:

long-term opportunity;

 hours that allow them to have a "personal life;"

- a retirement plan; and
- · increasing benefits through seniority.

If you don't offer these benefits and opportunities, these promising employees will leave.

Employees with potential often can be found in other service industries where they may start with lower pay. Job security, benefits, training, shorter work weeks and promotional opportunities are usually found at an employer who has good employees.

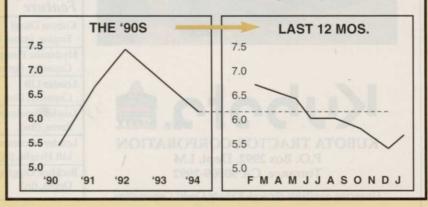
**Criteria**—Seeking and primarily offering seasonal employment is the surest means to attract sub-par employees.

Simply stated, how many people look for and are satisfied with seasonal employment? Most of you don't understand that career-oriented, professional workers are not looking for seasonal jobs—yet, this is what most employers want. If you want the best employees, you must make the effort both financially and professionally to do what is necessary to retain them.

The criteria each employer uses when hiring employees is usually different from other employers in a market. The following criteria may be helpful when recruiting and evaluating employees.

## A Recent History of Unemployment

The national unemployment rate either stayed the same for fell for 10 straight months, until January (the most recent month for which statistics are avalable), when it rose 3-10ths of a point. Overall, the unemployment rate has been decreasing steadily since 1992.



					partments
	GREEN IND AVG.	GOLF COURSE	ATHLETIC FIELD	LAWN	LAND- SCAPE
Paid holidays	82.1%	82.0%	96.4%	65.4%	69.0%
Paid vacations	82.4%	88.0%	96.4%	62.7%	66.5%
Paid sick leave	61.6%	64.5%	95.8%	37.3%	38.1%
Monetary bonuses	46.4%	39.9%	6.6%	64.7%	64.0%
Health insurance*	70.1%	78.1%	93.4%	47.7%	48.2%
Dental insurance*	34.5%	36.6%	62.3%	15.7%	17.8%
Retirement plan**	30.9%	31.7%	41.3%	20.9%	23.9%
Paid tng./educ.	68.8%	74.9%	76.0%	59.5%	52.3%

First, determine what type of work the individual is looking for. Does the potential employee view the opportunity as temporary employment while he looks for other work, or does he or she want this job to be a career move? If absolutely necessary, temporary employees may be sufficient, but for professional employees, temporary employment is not practical.

Second, determine what experience or specialty skill the employee brings to the company. Employees who can complement services already offered by the company will improve the company's opportunities. Discussing services is also a good time for prospects to address how they feel about training and their willingness to acquire additional skills through training.

Third, ask the individual why he or she chose your company to apply for a job. This is a great way to discover the employee's intent. If he or she simply flipped through the phone book and picked your company, that's probably not the best person for the job. A person who has researched the golf or landscape market in your area and is evaluating a couple of companies is likely a more promising employee.

Fourth, ask direct questions to determine both how he/she responds to pressure and how quick and favorable his/her responses are. After all, you are in the people business and employees must be able to communicate with clients, management, and their immediate supervisors. The responses from the prospective employee will serve as another indication of his/her potential.

Fifth, determine—through questions—the style of management under which the potential employee works best. This may be determined through questioning of previous jobs and previous managers. Find out where potential conflicts may arise and how he/she solves conflicting situations. If a future employee appears to have many areas of conflict or has a quick temperament, that candidate is not likely the best for the job.

The above-mentioned points all funnel into one single issue: what type of person is this individual? Do you like him or her as a person, and would you like to work every day next to this person? If you don't like the candidate, what are the chances he/she will get along with other supervisors and employees?

Good employees begin with attitude, image and the ability to socialize with other employees, customers and managers. If employees have a bad attitude, they are more detrimental to the company than they are worth the investment.

Also, if employees have a self-image problem, they will not be helping the company image, either.

Finally, if employees can't communicate and explain their feelings or needs, they are not a fit for a company because of their inability to communicate with others. Hiring good employees is not an easy task. These employees are looking for both an opportunity and a future with an employer. If you are not offering a future and opportunity for good employees, these quality employees will gradually leave your company.

**Build** a strong

foundation of

employees through

proper recruiting.

training

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—The authors own and run Wandtke & Associates, a green industry business consulting firm. They can be reached at (800) 966-3546 or by fax at (614) 891-7698.

# LM REPORTS

# Nuts and bolts: shopping for mower parts and more

#### by John B. Calsin, Jr.

• Some of the following tips will save you money on equipment parts and service. They come from Tim Yearsley and Jim Hash of M.S. Yearsley & Sons of West Chester, Pa., and Bill Neff of Main Line Mowers in Berwyn, Pa.

• Shop around for the right dealer. Talk with sales, parts and service people. Do your peers recommend one place over another? Location sometimes makes a difference, too. In some areas, there are numerous equipment and parts sales companies. Competition works in the buyer's favor. In other areas, your options are more limited.

• Buy back-ups for your high-wear parts. Some of these might include extra filters, belts for mowers, spare blades, gauge wheel and pins, etc.

• Check with the dealer to see if commonly-needed parts are normally in stock. Ask for several parts by their specific number rather than just accepting the counterman's "sure, we carry it." This extra homework on your part, will pay off.

• Ask if the dealer's parts department has a next-day or overnight policy. Are their suppliers set to handle rapid shipments?

• Ask how much experience the mechanics in the service department have. How long have they been there? Is there a lot of turnover? A new mechanic, under pressure during the busy season, may create more problems rather than solve them.

During the off-season, other factors may apply.

• Ask about special discount plans. Often unadvertised, special stock order plans are offered by some manufacturers. Shipment might take three weeks or longer. But the dealer may be able to pass on an extra discount if the part isn't needed quickly. Usually, with this plan, you have to buy in volume to help the dealer buy in volume from his supplier.

• Change the oil and clean filters at least once a week during the busy season. You might want to change as many as two or more times a week, depending on the equipment's total running hours. Service costs are in the \$40 to \$60 per hour range, so 30 minutes of preventive maintenance can save money and allow you more cutting time.

• Have a spare parts kit or "breakdown box." The kit should contain, at the least, mower blades, belts, air filters, fuel filters, spark plugs, tools to make the changes, lubricant to spray cables, and perhaps a spare tire, plugging kit or tube.

Some of these suggestions will take a little extra time and up-front money. But at

year's end, the bottom line should be healthier, and your stress level lower.

-The author is a freelance writer based in West Chester, Pa.

Chart, list of mowers, page 10

Gravely Pro 300 series with gravity feed fuel system.

Bunton: 28- and 60-inch cutting decks.



Howard Price handles knolls and berms well, company claims.



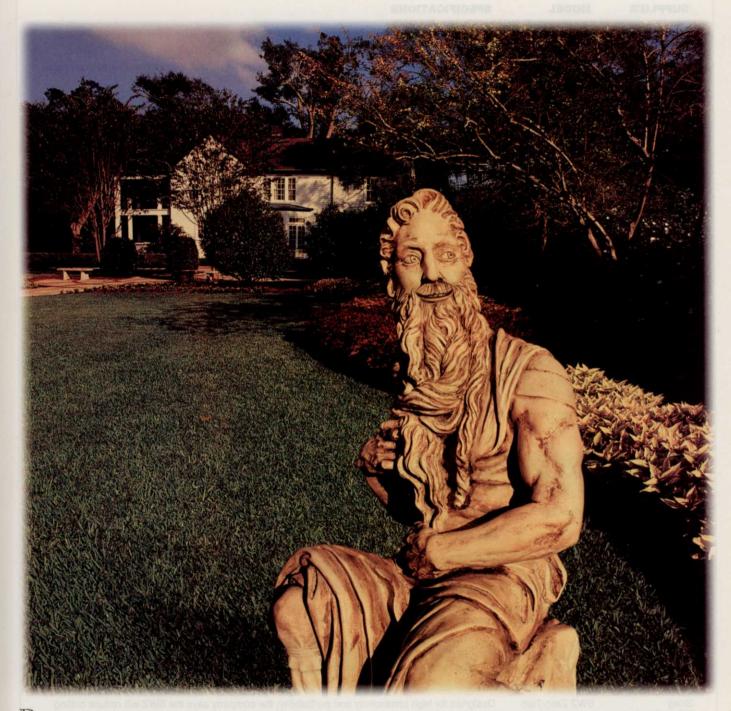
Scag's SWZ makes no-scuff 'zero' turns.



Grasshopper: with Quik-D-Tach decks, mulching units.



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Bunton Circle No. 312	28"-60" commer- cial mowers	Variable-drive walk-behind mowers have indexed speed control, quick mower blade disengage- ment and outstanding maneuverability. Safety interlock system.
Dixie Chopper Circle No. 313	X-Series	The X-Series features 2-cylinder, Kohler engines, at 20hp or 22hp. Maximum speed 8mph; wheel base 44"; overall width 54"; overall length, 75"; six-gallon fuel tank.
Dixon Circle No. 314	ZTR mowers	These riding mowers have 42", 50" or 60" cuts. Electric clutch; Kohler engines; all models have electric start. The zero turning radius reduces mowing time.
John Deere Circle No. 315	F1145 series front mowers	Yanmar diesel; three cylinders; hydrostatic U-type transmission; heavy-duty rear-wheel-drive axle; hydraulic PTO clutch. The transmission, differential, 2-speed axle and planetary final drives are also used on the company's 855 utility tractor. Wet-disk brakes allow constant side-hill feathering with almost no wear or adjustment.
Encore Circle No. 316	Pro-Line walk- behind mowers	Walk-behind and steerable sulky. Dual V-belts to each rear wheel; six-inch brake drums; 52" deck; 20-hp liquid-cooled Kawasaki engine. Zero-turning ability for tight spots and trimming; heavy-duty, impact resistant anti-scalp roller is standard on the Pro 60.
Exmark Circle No. 317	Turf Tracer hydro	60" or 52" TriVantage decks are fully-welded, gauge steel. centered speed controls for left- or right-handed operation. Cutting heights from 1.5" to 4.5". Optional 3-bushel grass catcher; electro-magnetic clutch PTO; 5-gallon tank. 12-volt battery.
Ferris Industries Circle No. 318	Commercial mowers	Rotary mowers from 13hp/32" walk-behinds to 22hp/72" riders; belt drive and hydro models; Pro Series riders are designed to cut up to a full 72" at normal mowing speeds; 5-year warranty.
Grasshopper Circle No. 319	Zero-Turn Front Mowers	PTO shaft-driven outfront decks; Quik-D-Tatch Combo Mulching Deck (U.S. patent pending) in five sizes from 44" to 72." The Quik-D-Tatch mounting system (U.S. patent pending) with self-contained deck stand lets operator remove and re-attach deck or other accessory.
Gravely Circle No. 320	Pro 300 Series	Kawasaki, air-cooled engine; gravity feed fuel system; manual recoil start; max speed 5.4 mph; individual band-type wheel brakes; the latest in hydrostatic transmission benefits; hand controls make it easier to operate; two independent pumps and motors for zero turning radius.
Howard Price Circle No. 321	Turf Blazer walk- behind mowers	Kawasaki engines; 12.5-17 hp; one cylinder; solid state ignition; 4-gallon tanks. The company has a new 91" deck which is available on choice of three traction units, ideal for large projects with a capacity up to 4.6 acres. Handles knolls and berms well.
Jacobsen Circle No. 322	Turfcat T422D	Hydraulic 4-wheel drive and differential lock; diesel power; hydraulic PTO; wide-core radiator; full-pressure lubrication; superior hill-climbing traction; wide stance and low center of gravity for stability; hydraulic PTO means quieter operation.
Kubota Circle No. 323	GF1800	4-wheel drive; can switch to 2-wheel drive; turning radius of 17.3"; bevel-gear drive system; hydrostatic transmission; 8.4-mph maximum forward speed; designed to be very versatile; three mower decks can be used; hopper-type or bag grass catchers.
Lesco Circle No. 324	Walk-behind mow- ers, three decks	48", 36" and 32" decks; 4-cycle Kawasaki or Kohler engines; 5-gallon fuel tank; four forward speeds; 6-inch drum brakes. Extra-deep, balanced cutting decks for excellent maneuverability.
Ransomes America Corporation Circle No. 325	Bob-Cat T-3100	48" or 61" cutting decks; Kohler engines; durable hydrostatic transmission; 7-mph top speed. Optional features include an electric deck lift, grass collector and leaf mulcher.
Scag Circle No. 326	SWZ Zero-Turn	Designed for high productivity and profitability; the company says the SWZ will reduce cutting time by 20-40 percent. Independent power to each wheel allows no-scuff zero-radius turning.
Snapper Circle No. 327	Pro 7 Series	The company reports its mid-size walk-behinds have been redesigned for easier maintenance.
Toro Circle No. 328	Groundsmaster 300 Series	Traction and stability are improved with extra large turf tread tires; 4-wheel drive in the 325-D model; operator comfort a priority; liquid-cooled engines.
Walker Circle No. 329	Mid-size commer- cial mowers	Features custom designed sealed gear drive axle with machine cut gears, ball bearings and ductile cast iron axle and hub; dual hydrostatic zero -turn radius.
		Source: LM survey, February 1995, Not all-inclusive due to space limitation

Source: LM survey, February 1995. Not all-inclusive due to space limitations.

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read and follow label directions.





# The right mower for the right job

# Mulching mowers save time, money, government hassles

by Rick Rodier

■ There was a time when turf managers and landscape professionals could bag grass clippings, haul or pay someone else to haul them to a local landfill and have a gratifying, finished look.

However, more state and local governments are banning yard waste disposal from landfills, but the after-cut appearance of the grass you're mowing remains as important as ever. This leaves you with few options for disposing of grass clippings: bagging and hauling to a diminishing and increasingly expensive number of disposal sites; composting or leaving clippings on the turf.

As the cost of collecting and disposing of grass clippings rises, mulching mowers seem like one of the best options. There are many benefits to mulching grass clippings. Agronomic benefits result from returning clippings to the turf. Efficiency is improved because the mowing process is not interrupted to bag and compost clippings. And transportation charges are automatically eliminated.

**Agronomic benefits**—Dr. James R. Watson, past president of the International Turfgrass Society and a recognized green industry expert, says mulching helps keep the plant root and crown areas cool, aids in proper clipping decomposition and conserves moisture, which enhances overall growth and photosynthesis.

"The strongest benefit," says Watson, "is pure economics. Mulching, rather than bagging, saves time, labor and money. Mulch continued on page 14

Advanced mulching units mulch leaves, twigs and other material and give a quality cut.



# Industrial rotary mowers: not just for tough roadsides

by Ian Burden

■ Wide, industrial rotary mowers aren't just for tough roadside grasses anymore.

Within the last five years, technical advances have allowed rotary mowers to be used in many fine turf situations, including • golf courses, • industrial parks, • public school and university grounds, • public parks and • other areas where a smooth finish is required.

The addition of multiple, small, high-speed blades has made roadside rotaries capable of fine finishing cuts. (Most roadside rotary mowers use only one large, relatively slow-cutting blade in each head.)

For a comparatively low price, you can purchase a finishing rotary mower that will cut more acres per hour than other comparable equipment. This type of rotary mower will also very likely require less maintenance: the blades are easier to sharpen and it has fewer, less expensive parts.

However, when choosing a finishing rotary mower for smooth-cut mowing, be sure to take the necessary time to educate yourself on the various features of the mower to make sure you get a machine that will function properly and leave a finish that you will be proud to have. Here are a few purchasing points:

Blades—They should be relatively thin and sharp, and have continued on page 16



Small, highspeed blades allow rotary mowers to be used in fine turf mowing.

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#### MULCH from page 12

also contributes essential nutrients to the turf and can reduce total fertilizer applications by as much as 25 to 35 percent."

According to research by the Toro Co., at least 20 states have enacted bans limiting or restricting yard waste—such as grass, leaves and tree and brush trimmings—from their landfills. Other states, cities and counties have bans scheduled to go into effect soon.

**Composting an option?**—Composting is another way of disposing of clippings, but it is not cost-free. Bagging clippings creates greater wear and maintenance costs on machinery. In addition, collecting clippings and bringing them to a compost site means increased time, labor and fuel costs, and is an overall inconvenience.

Customers often need to be educated about composting, which may take time and effort, as well. And compost piles must be properly watered and aerated to prevent odor and fungal growth problems.

Some operators simply leave clippings on the lawn using side- and rear-discharge mowers. However, the after-cut appearance resulting from discharge mowers often is unacceptable to turf managers, landscape professionals and their customers.

Because of the financial burden and the environmental and aesthetic concerns associated with clipping disposal, many industry experts agree that bagging will become obsolete. Allen Blakey, with the National Solid Wastes Management Association, believes mulching will become the most practical option for grass clipping disposal.

"The most inexpensive method of clipping disposal is to simply leave [the clippings] on the lawn. You can pay more and have the

# The benefits of mulching mowers

• Mulching mowers can operate effectively in wet, high or heavy turfgrass.

• Mulching does not cause thatch, disease or weed problems.

• Commercial riding mowers with mulching decks operate effectively at "normal" cutting speeds.

• Converted conventional mowers do not offer the same result as dedicated mulching decks.

• The number of times and how a blade of grass is cut can determine the effectiveness of a mulching unit.

clippings hauled to a separate composting facility," says Blakey, "or you can pay to dump them in a landfill if you can find one that will take yard waste."

Mulcher retrofit works—Joe Beukema, foreman for Tender Lawn Care, Grand Rapids, Mich., manages lawns for both commercial and residential customers. His company realized tremendous savings in labor and time after it retrofitted several side-discharge mowers with mulching decks two years ago.

"Before the retrofit, my crews had to cut heavy grass three or four times so that clippings were small enough to leave on the lawns," says Beukema. "With our current mulching decks, we cut a maximum of two times."

**Design improvements**—The first commercial mulching mowers were released in the 1980s, and were actually conventional mowers converted to mulching mowers. Using a heavy metal plate, the side or reardischarge chute on the mowers were blocked in an attempt to create a mulching effect.

Mulching units have steadily improved since they first came on the market. Today's units can offer a much better-looking and more consistent quality of cut in most conditions. What has made the difference is a marked improvement in engineering and design. Toro's Guardian recycler deck was placed on the market in 1992, as one of the first dedicated mulching decks to use a patented chamber, deflectors and special blade design. These elements, working together, direct the clippings back into the turf, where they will decompose.

Mulching kits and dedicated mulching

decks are the two types of mulching equipment available. Decks for both range from 21- to 72-inch with horsepower to match.

Mulching decks require more horsepower than conventional mowers because of the increased cutting volume. Blades may need to be sharpened more often, and more demand is placed on components. Fertilizer ratios may need to be adjusted to accommodate the soil nutrients provided by the clippings.

Mulching kits—Mulching kits can vary greatly in design. Some simply close off the discharge chute with a plate, as with the early mulching models. More sophisticated kits come with plates, cutting chamber and blades, and can offer results similar to a dedicated mulching mower.

Of the available mulching products, mulching kits are the least expensive and

# **Before you buy**

• Select a mulching mower based on needs, expectations and budget.

• Analyze the type of grass you will be cutting; what kind of after-cut look is required? Are clumping and windrowing allowed, or is neatness essential.

 If you mow in wet or heavy turf, will you still be able to meet after-cut standards?

• Determine the deck, chamber and blade design best suited to the turf conditions and needs you face. -RR

most versatile. The convertible mowers can mulch, side-discharge or bag. Performance aside, most of these attachments offer "zero discharge."

Plate-only mulching kits pulverizing clippings, but they do not direct the cut grass out of the machine in an orderly way. As a result, the mower often bogs down, especially in wet, heavy grass, and clippings are more likely to stick in the deck, causing noticeable clumping, windrowing and deposits in reverse. In short, while relatively inexpensive and versatile, mulching kits provide a lower quality of cut.

Most dedicated mulching mowers provide a good after-cut appearance under normal conditions. These units feature an enclosed, conventional cutting deck design with no discharge chute. The method of clip processing varies by unit and so will the results, particularly in wet and heavy turf. The enclosed deck is more durable than a traditional mower deck with a mulching kit attachment.

Some dedicated decks have limitations similar to most mulching kits. Many still fail to provide an orderly way for clippings to escape the deck. This creates problems with power bogging and clippings that clog the cutting chamber.

Closed systems are also subject to internal damage from debris. Unfortunately, most cutting chambers on dedicated mulching units are welded to the deck housing and cannot be replaced. Finally, the after-cut appearance can be less than satisfying.

To overcome these problems, the most advanced mulching units have a key feature: an air-flow design that provides uniform cutting and dispersion.

—The author is a product manager for The Toro Co.

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Whatever mower you decide to buy, take the time to educate yourself in regards to the features.

#### **ROTARY** from page 12

adequate updraft to suck up the grass that is pushed down by the tractor wheels. However, excessive updraft will severely increase horsepower requirements and increase cost of fuel, labor and maintenance.

Make sure that the blades are at least 3/8-inch thick. If they are too thin, they will bend if an object is struck and the mower will leave a streak in the grass. The blades in the individual mower heads should overlap at least one inch.

**Decks**—The multiple mower sections should overlap at least six inches to prevent streaking. Check to make sure the spindle mounting plate is at least as wide as the blade, necessary to avoid lateral instability.

A constant velocity (CV) driveline maintains constant driveshaft speed while turning the tractor and mowing unit, and will eliminate a great deal of wear on the driveline and gearbox by preventing slowdown and speedup of the driveline during turns. Also, insist that your mower have a slip clutch to save the driveline from major damage is a large object is struck.

**Belts**—You can get yourself into a lot of trouble if you choose a mower with inadequate or unmatched drive belts. All industrial mowers with idler pulleys (and most do) should have matched, computerdesigned belts.

Matched belts are provided by the belt manufacturer. They are cut from the same belt material to ensure that they have the same resistance to stretching and wear. The computer design provides the proper size and type belt and the most efficient pulley sizes to provide long economical belt life.

Single belts used by most mower manufacturers (rather than double matched belts) will result in a seriously shortened belt lifespan and untimely and expensive parts replacement.

Make sure that the belts are easy to adjust and replace when necessary.

**Other factors**—A hydraulic mechanism to raise the wings for transportation to and from the worksite should be standard. Tires should be at least 26.00 x 12.00 x 12 pneumatic, flotation type. This will provide higher flotation, greater weight distribution and less turf compaction. The hydraulics and the mowing unit should be quick-disconnect types.

Make sure that the spindle and housing have seals that will keep the oil in and the trash out. It should be easy to lubricate, and the blade shaft should be at least 1-1/4-inch in diameter with a blade mounting plate as wide as the blade.

To avoid scalping on uneven terrain, your mower should be equipped with four gauge-wheels (wheels that will gauge the depth of cut) on each of the individual mowing units. An anti-scalping roller, three inches in diameter by 12 inches wide, should also be mounted on the front of each mowing unit.

Safety is a consideration. Are all the moving parts on the deck fully shielded? Is there a cover on the gearbox? When the wings are folded up, do they have safety latches to keep them in place?

The manufacturer should have knowledgeable and capable customer service and technical service personnel available.

—The author is vice president of marketing for Alamo, Seguin, Texas. Alamo manufactures and distributes McConnel, Mott, Terrain King and Triumph power equipment.

# Equipment ready for spring?

• Preventive maintenance is an essential part of extending the service life of commercial equipment, as well as avoiding costly repairs and down time. The following preventive maintenance is recommendd for all commercial equipment as part of a yearly spring check-up.

To prepare for the spring season, start with a thorough cleaning. Give the machine a good looking over for loose nuts and bolts, loose wires, metal fatigue and more. Repair it as needed.

For large walk-behind and riding mowers:

Change and gap spark plugs.

Change engine oil and filter.

Clean carburetor or rebuild if necessary. Adjust to manufacturer's specifications.

Clean air and fuel filters or replace if necessary.

✓ Remove engine shrouds on all air cooled engines, clean any grass and oil build up of shrouds and engine cooling fans.

Inspect all cable linkages, lube and adjust.

Inspect all mower spindles, check bearing for wear and lube.

 Sharpen and balance blades or replace if necessary.

Adjust and lube all cables.

 Adjust governor and set RPMs to factory specifications.

Inspect all belts, pulleys and belt guides; adjust as needed.

Lube and adjust chains if applicable.

Check the condition of all fuel and hydraulic lines.

Check caster wheel bushings and bearings for wear; replace or lube as needed.

On machines equipped with the Peerless 4 or 5 speed transmissions:

✓ Inspect the output shaft busings for wear, replace if necessary and refill transmission with Bentonite grease.

Set tire pressure and level the deck.

Check and adjust tracking.

Check all safety switches and guards to make sure they are installed and working properly.

-Ron Weingartz, General Manager of Weingartz Supply Co., Inc., writing in The Landsculptor.

# **GOLF & ATHLETIC**

# **Last-ditch rescue tips** for ailing greens

# **USGA Green Section official reveals** simple strategies for helping heat/humidity stressed greens stay alive.

Several weeks of unrelenting heat and humidity took their toll on greens in the northeast this past summer. The once-in-10-year conditions didn't damage all greens, nor even a majority. A declining green or two on a course was not an unusual sight .though.

Some superintendents lost jobs because of it.

"When one or two greens die, the membership wonders what did you do to these and not the others," said Robert C. Vavrek, Jr., USGA Green Section. "It was hard to explain."

A variety of conditions predispose a green for failure under unrelenting heat and humidity, Vavrek told about 300 superintendents at the North Central Turf Conference near Chicago.

The location of a green, shielded either by a hillside or surrounded by trees, may put it in jeopardy. Air movement is limited. Disease pressure increases.

Also, layering-either through improper construction or maintanence-is not such an uncommon problem. Cores taken from a suffering green will reveal this.

"There's a laver somewhere and the water is not moving through the soil profile." Vavrek said.

Until recently he traveled the Great Lakes Region for the USGA. Because of a 1994 Don't get fancy when trying to from Michigan to Montana.



realignment, he now works save a green, advises Robert Vavrek, Jr.

In talking to superinten-

dents who kept their greens playable-and membership relatively satisfied-Vavrek offered these pointers for rescuing greens during periods of unusual heat and humidity stress:

• Fans on the green, or removing several trees can offer short-term help.

• Put away the triplex mower and use a walking mower.

"You see it time and time again, golf courses spending money on fungicides and hiring an extra person, but they won't buy one or two walkers to have on hand for an emergency," said Vavrek.

• Turn off the automatic irrigation system. Keep the green on the dry side. Hand water as much as possible. Quoting from a 50-

> vear-old brochure from the Canadian Golf Course Association, Vavrek said: "More grass is killed by overwatering than by underwatering it."

• Aerify, spike or use the Hydroject. "If I had one (Hydroject) I would be using it a lot," he commented, perhaps even on a 7to10-day schedule on a heat/humiditystressed green.

• Consider applying "a very very low rate" of nitrogen-perhaps an organic source—and phosphorus from a spray tank.

Trying to solve the problem with successive applications of fungicides and fertilizer is unwise, said Vavrek.

Better to keep your greens rescue "very, very simple."

-Ron Hall



Use low rates of nitrogen on stressed golf greens to help save them.

Weather stations for golf turf, page 6G

**Managing fields** for use patterns, page 7G

Working with volunteers, page 10G

ELSEWHERE

**Strategies for** saving your time, page 11G

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Photographed at Blackwolf Run, Kohler, Wisconsin

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you'll keep golfers from tracking disease up on to your greens and tees. And you'll get excellent control of powdery mildew and rust on ornamentals. What's more, BAYLETON comes in water soluble packets for easy mixing and less applicator exposure.

To find out more, contact Miles Inc., Specialty Products, Box 4913, Kansas City, MO 64120. (800) 842-8020. Then, just apply BAYLETON, and the rout is on.



Circle No. 123 on Reader Inquiry Card



The Metos weather station references evapotranspiration rate as inches or millimeters of water loss per 24-hour period.

# What weather stations can do for your grass

#### by Dan Dinelli

• Weather is one of the most difficult factors a turf manager faces. It is beyond human control, yet it can be the greatest influence on turf quality.

Though we cannot rely on consistent, accurate weather predictions, we can collect detailed historical weather data. With this information, degree-day accumulations and computerized models can help predict favorable conditions for pests. And spray data can be entered into the program to track the impact of spray decisions on disease activity.

Scientific support of what we do is becoming increasingly important. People who may question our management activities can relate to a computer print-out over a "judgment" based on experience. If evapotranspiration (ET) rates call for irrigation, the decision is based on scientific calculations and not a person's opinion.

A weather station, with disease model software, is a tool to do just that. Last spring, we purchased a Metos weather station, complete with 10 sensors:

 a thermometer to measure air temperature five inches above the turf;

• another thermometer for measuring soil temperature two inches below the turf in our fourth green;

• a rain gauge to measure rainfall and irrigation water;

• two leaf wetness sensors;

 a solarimeter to record solar radiation and day length;

• a soil moisture probe located two inches deep in the fourth green;

• a relative humidity sensor six inches above the turf; and

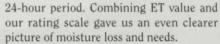
• an anemometer to measure wind speed and direction.

A solar-powered micrologger automatically scans all sensors every 12 minutes, and stores this data for up to a week. Information is downloaded from the micrologger to the personal computer in the grounds manager's office any time.

Singularly or collectively, data from these sensors improves and at times justifies many of our management practices. Other biolog

**Soil moisture**—The computer, using a Watermark gypsum block soil moisture sensor, graphs soil wetness readings. From the information, we were able to design a rating scale that helped us determine daily watering needs.

The weather station also calculates ET as inches or millimeters of water loss per



Information gathered from soil temperature has helped us to better judge the timing of our first fungicide application to control summer patch (*Magnaporthe poae*) and take-all patch (*Gaeumannomyces graminis*). Soil temperature data will also indicate the proper timing of preemergence herbicide treatments for crabgrass control.

Microbial activity and nutrient release (by some fertilizer carriers) are governed largely by soil temperature and moisture. With this data, we can better understand and predict fertilizer activity.

**Insect control**—Scientists have come up with a way to better predict insect emergence and activity by tracking accumulated heat, expressed as degree-days.

The degree total for the day is the average minus the base temperature. Each daily calculation is added to the previous days' figures to get the running total of accumulated degree-days.

Researchers have developed degree-day thresholds for many insects. Knowing the degree-day value and referencing it to a particular insect's development, in effect, creates a calendar of insect activity. Following such a calendar helps the turf

> manager focus on intense scouting for a particular insect and better target insecticide applications if needed.

> The weather station has refined our degreeday calculations. It averages 120 air temperature measurements each day. This average is much more accurate than simply adding the day's maximum and minimum temperature and dividing by two, the method we used in the past.

Weed control-

Other biological activity can be predicted using degree-days:

• Some plants' determination to flower or set fruit can be predicted with degree-days.

 Poa annua has a degree-day model for its flowering period.

• Understanding the plant's physiological state can better determine the timing



6G Landscape Management, March 1995

#### 

'Home grown' research based on collected data coupled with field observations is needed.

of plant growth regulator applications.

• Because plants and insects share this heat-related phenomena, field observations of plant activity can also help determine insect and weed activity. For example, pre-emergence crabgrass control can be applied when the bridal wreath spirea (*Spiraea x vanhouttei*) blooms. In this case, the bridal wreath spirea is an indicator plant for the conditions of crabgrass germination.

We have a garden of indicator plants growing on the golf course, and next season we will make comparisons of DD values versus indicator plant responses.

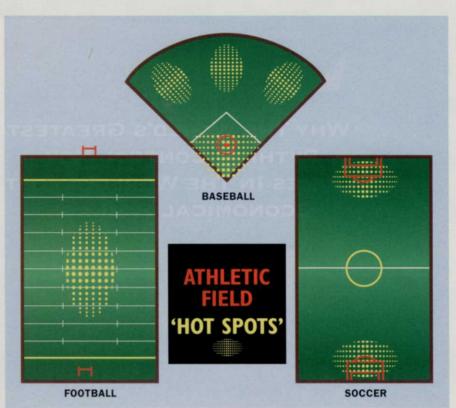
**Disease control**—This weather station has three prediction models for turf diseases: pythium blight (*Pythium aphanidermatum*), brown patch (*Rhizoctonia solani*) and dollar spot (*Lanzia & Moellerdiscus* spp.). The predictive models, based on complex mathematical calculations, are used as indicators of favorable environmental conditions for disease.

They do not account for inoculum pressure, species or cultivar resistance to disease, fertility or future weather (environmental) conditions. Ultimately, the turf manager makes the decision on disease pressure versus needed controls.

What's to come—Considerable work is still needed to establish historical databases for weather data and to accumulate field observations that relate to it. More disease models must be constructed. Degree-day models need to be calculated for other pests as well as for beneficial insects. "Home grown" research based on collected data coupled with field observations is needed. We are looking at soil temperature readings to help fine tune the timing of green cover applications, day length and how it may affect plant responses, solar thermal units to further refine degree units, and soil temperature versus root growth.

The uses and applications are limited to your imagination. That's what makes the weather station an exciting tool.

—The author is superintendent of grounds at North Shore Country Club in Glenview, Ill.



# Managing athletic fields for specific use patterns

# Save money by localizing your maintenence areas, this expert tells the STMA.

• You can maintain an athletic field with less than \$1,500 a year in materials, if necessary, says Dr. Henry Wilkinson of the University of Illinois.

Wilkinson, speaking at the Sports Turf Managers Association's annual conference in Florida last month, said, "In general, the greater the shear force, the higher the cost of maintenance." That means that football fields—especially on the professional level—are the highest maintenance, followed by soccer, baseball and softball fields, respectively.

Maintenance factors which influence field safety, playability and appearance are, in order of importance:

1) selection of turfgrass species

- 2) irrigation
- 3) mowing
- 4) fertilization
- 5) use patterns
- 6) damage repair

7) aerification

8) pest management

"Sports fields do not need uniform maintenance," Wilkinson told the group. "Certain areas need more maintenance than others." For instance, the areas of highest use (and, thus, maintenance) are:

• Football fields: between the hash marks, from 30-yard line to 30-yard line

• Soccer fields: in front of the goal mouth

• **Baseball/softball fields:** around home plate, the pitcher's mound and the three areas where outfielders normally stand

Just as use areas vary, you should vary your maintenance patterns for cost-effectiveness. "If you manage a football field for the borders, the center won't last," Wilkinson said. "Likewise, if you manage for the center, you're over-managing the borders. So if you can localize your maintenance, you can afford to do more."

Wilkinson offered these tips for lowcost athletic field maintenance:

**1)** Look for wear-tolerance in the highuse seasons when you select grasses.

2) Water the entire rootzone, and don't

WHY THE WORLD'S GREATEST PYTHIUM CONTROL NOW COMES IN THE WORLD'S MOST ECONOMICAL PACKAGE.

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Talk about being ahead of your time.

When Pace® was first introduced, it became the best Pythium control you could buy. (And its water-soluble packaging also made it the most convenient.) But we've only now come up with a container that's just

Our solution is on your left. What it lacks in excitement, it makes up for in savings.

as perfect.

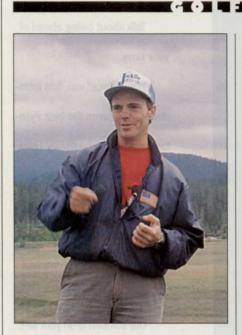
The actual product hasn't changed. It still combines the systemic power of Subdue® with the contact properties of Fore® in a water-soluble package. Only now, Pace is just as healthy for your budget as it is for your turf. So this year, try Pace. We improved it by change

trash. Not the part that goes on

ing the part that goes in the

your course.





Dr. Henry Wilkinson suggests 'don't guess' when it comes to irrigating your athletic fields.

guess. Established turf will take about one inch of water per week.

3) Mow regularly, and in non-use areas, raise the cut ½-inch.

4) Do not collect clippings.

5) Fertilize as needed, and lower the amount you put down each application. In general, 2 to 3 lbs. of N per year per acre should be sufficient.

6) Use creative encouragement to vary use patterns. Tell the people that are using the fields to try and spread their use, and offer to show them how.

7) Aerify high-activity areas more. Aerifying should be done at least once a season during cool, growing periods.

8) Repair damaged areas only. During the off-season, repair by seeding; in-season, you almost have to use sod.

9) Use soil conditioners when you make repairs.

**10)** Generally, pest management will be limited to insect control, and only when insects reach a point where they are actually damaging the turf.

Using his recommendations, and figuring the normal football/soccer field as being 1.4 acres and the normal baseball field as 1.6 acres, Wilkinson came up with these minimum costs to maintain a field for one year:

	Football	Baseball
Fertilizer	\$210	\$240
Aerification	\$550	\$600
Pest mgmt.	\$95	\$106
Damage repair	\$200	\$200
		Jerry Roche

# **Working with volunteers** takes a special effort

Volunteers claim a facility as their own. You reap the rewards of their work and their pride in the community's facility.

#### by Mike Calhoon

Today's limited budgets, combined with increased use of sports and recreational facilities, force us to seek ways to do more with less. One option is to work with volunteer groups to extend the scope and efficiency of your programs with little added cost.

Opening volunteer programs to just anyone can lead to disappointment when "helpers" need too much supervision or simply are unable to do the job. So you must decide what you want to accomplish, the level of expertise needed, and standards of ability and experience that are acceptable.

Tap into the resources of the people you'd like to volunteer. First, identify the target groups and their key interests. For instance, seek out horticultural clubs for

assistance with landscaping and flower beds. Look to facility user groups and those affiliated with them-such as parents and booster clubs-for site-specific tasks.

Make assignment schedules flexible enough to attract volunteers from numerous groups. For example, students at area universities can make excellent volunteers. They may not be able to make a year-long commitment, but often can devote blocks of time to specific tasks.

Such volunteer efforts can be beneficial to the students. too. Many students are "book smart" but have little hands-on experience. If we, as professionals, expect to find experienced personnel, we need to provide more opportunities for them to hands-on experience will look Fort Collins, Colo.

doubly good on a resumé.

**Recognition**—The most important element of successful programs is to recognize the efforts of volunteers. Let them know how important their service is when they agree to tackle the job, as they perform the task, and after their work is completed. Here are some other ideas:

- Write thank-you letters.
- Host picnics or luncheons.

• Distribute special badges, shirts, jackets or caps.

Provide certificates of service.

• Write public thank-yous in the local newspaper or your newsletter.

• Give volunteers preferential treatment, such as "preview" tours of new or upgraded facilities before these sites are open to the public.

Keep a separate file on each volunteer. List:

1) full name, address, work and home phone numbers;

2) special interests and abilities; and

3) complete records of service, including where, when, what and how much time was spent.

Hold an annual celebration. Include everyone. Use your volunteer files to track



gain the experience. The combi- Volunteers help build a handicap-accessible nation of altruistic effort and walkway to a fishing pier at North Shields Pond in

10G Landscape Management, March 1995

down these people and issue a personal invitation to attend, via letter or phone. To skip some people because of a poor recordkeeping system will cause the volunteer program to fall apart as quickly as having no recognition system.

Volunteers who are pleased with the program will spread the word to other people with similar interests and abilities. This word-of-mouth "advertising" is the best outreach effort for any program.

Find ways to communicate with the public about the facility, its programs, and its need for (and thanks to) volunteers. Get this message out via the local newspaper, your facility's newsletter, and/or PSA (public service announcements) on local radio or television. Provide thorough information with consistent timing and placement. The public should know where and when it can find such information.

**Preparation**—Train volunteers properly. Tell people what they need to know, what will be expected of them, and how to accomplish it. Develop specific training programs. Monitor training and fine-tune it as necessary.

Develop a system to document each

volunteer's participation in the training programs, including a form signed by the instructor and the volunteer confirming that each training step has been completed. Add these forms to the volunteer's file.

GOLF & ATHLETICATURF

Provide the proper supplies and tools. Volunteers may not expect the best, but don't expect them to work with anything less than what you'd supply for your own crews.

Provide adequate supervision. A thoroughly trained volunteer who is highly competent in operating a certain piece of power equipment may require only that a supervisor be in the immediate area, available to offer assistance if needed. A trainee and relatively inexperienced operator will need direct supervision.

**Protection**—Follow all laws and ordinances, from the federal to the local level. Here are other ways to protect your department and facility:

• Work with top management and your attorney to establish liability policies, and follow those policies precisely (for example, restricting the operation of power equipment to 18-year-olds or older).

• Check with the attorney on the

advisability of having volunteers sign a liability waiver. Though such forms may not be legally binding, they can sometimes be useful to show that the volunteer indeed had knowledge that some level of expertise was needed.

• Conduct background checks if an individual will be placed in a position of trust, such as interacting directly with children. Follow through with the background check even if the person moving into a position of trust has been a long-time volunteer in another segment of your program. All information obtained through a background check must be kept confidential—in a separate file accessible only to the specified personnel who have final approval of the volunteers selected for such positions.

• Make sure insurance coverage is adequate, not only to protect the volunteers, but to protect the facility and its personnel from possible legal action.

-Mike Calhoon is a park technician for the Fort Collins (Colo.) Park Department and an active member of the Colorado Chapter of the Sports Turf Managers Association.

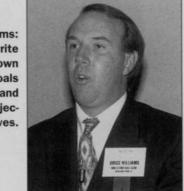
# 10 strategies you can use to make time more valuable, productive and rewarding

Veteran Chicagoland superintendent Bruce Williams gives pointers on getting more out of the 168 hours in a week.

• Time must be used. It can't be put in a bank and later withdrawn. Since it must be spent, spend it productively, says certified golf course superintendent Bruce Williams.

Williams, a super since 1979, gives colleagues pointers on how to squeeze extra minutes and hours from each day.

He conducts time management seminars on behalf of the Golf Course Superintendents Association of America (GCSAA). This past December he shared suggestions with about 300 fellow superintendents and assistants at the North Central Turfgrass Expo near Chicago. Williams: write down goals and objectives.



Successful time management, he says, is absolutely vital to becoming a successful superintendent.

Williams, at first glance, has less time than most. He's superintendent at Bob O'Link Golf Club, Highland Park, Ill., with a staff of 18. For the past four years, he's also been a board member with the GCSAA. Before that he served on the board and was president of, first, the Chicagoland Superintendents Association and, then, the Midwest Association of Golf Course Superintendents.

He says GCSAA business takes about two hours of his time daily.

He maintains that if he hadn't developed strategies (which he admits are still far from perfect) to manage time, he couldn't fulfill his responsibilities to his course nor to the GCSAA board, and still find sufficient time for his family and himself.

Williams says that everybody has exactly the same amount of time each week— 168 hours. The difference comes in how individuals use their 168 hours.

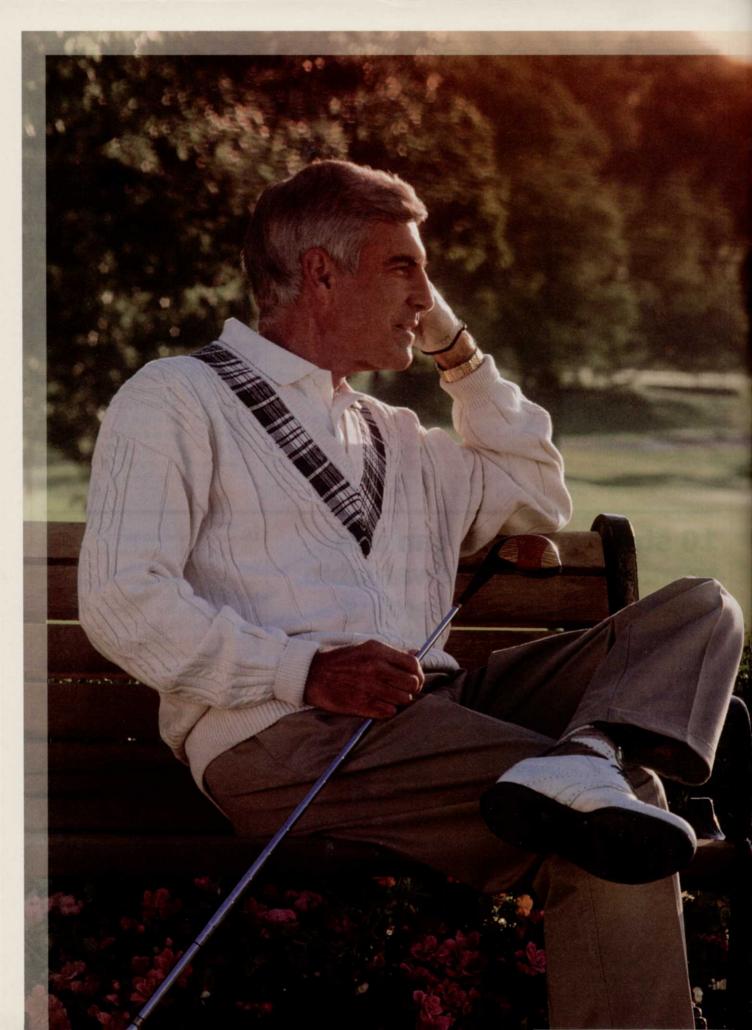
Here are 10 strategies that superintendents can use to make their time more productive and rewarding:

**1) Plan, and plan regularly**, maybe even a few minutes each morning.

2) Write down goals and objectives, then prioritize them. Make an "A-B-C" list. The A list contains tasks that must be done, the B list things that should be done, and the C list jobs that it would be nice to do. Do the A list first.

3) Focus on objectives rather than activities. "It's not how busy we are that determines success, it's meeting our objectives," says Williams.

4) Take items in order of importance



relative to the people you work for or report to.

.5) Complete what you start, Do g

a) Delegate, delegate, delegate, "I you've hired good quality people, then you can delegate," he says.

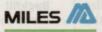
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One application in the spring to control billbugs and *Hyperodes* weevils provides enough residual to effectively control grubs throughout the summer.

What's more, since MERIT works while using remarkably low levels of active ingredient, it's less toxic to wildlife. To find out more, contact Miles Inc., Specialty Products, Box 4913, Kansas City, MO 64120. (800) 842-8020. And make MERIT part of your pest control program. Your golfers will like what they see.



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#### 

relative to the people you work for or report to.

5) Complete what you start. Do it right the first time.

6) Delegate, delegate, delegate. "If you've hired good quality people, then you can delegate," he says.

7) Make people accountable. "We're all hired to do a job. If people have a right to make you accountable, then you have a right to make the people who work for you accountable," he says.

8) Conquer procrastination. If a vital task needs to be done, do it *now*.

9) Make time for yourself. Keep your job in perspective. You also need time to dream, relax, and to do some of the things you like to do.

10) Spend your time more carefully than you spend your money.

-Ron Hall

# Staking, filling trees: keys to transplanting

# As a general rule, most trees with a diameter greater than three inches don't require staking.

• Current research shows that a shallow planting area should surround the transplant hole.

To make a planting area, the ground around the hole should be shovel-dug or rototilled to at least a 10- to 12-inch depth. This depth is appropriate because the tree's roots that absorb water and nutrients are located within an 18-inch depth of the soil surface.

The planting area should be three to five times the width of the root ball, or, the soil should be loosened or tilled well past the current-year drip line so roots can spread horizontally into the native soil. Roots spreading out in this manner create a stronger base for the tree, especially in times of drought.

**Digging the hole**—A planting hole should be dug near the center of the planting area after the area has been rototilled. The hole should be deep enough so that the tree's base is at or slightly higher than ground level. The root ball should not sit on the fill soil, but on the bottom of the

# Turning 'time wasters' into 'time savers'

• "We don't lose time in 20-hour segments. Or in two-day segments," says Bruce Williams. "We lose it five minutes at a time, 10 minutes at a time, 15 minutes at a time."

These lost minutes can leave a superintendent, at day's end, trying to squeeze "five pounds of tasks into a three-pound bag."

Workday time wasters, and suggestions for picking up precious minutes, include:

▶ Drop-in visitors. What's wrong with saying upfront, "I've only got five minutes; let's get right to business?" But use discretion. For instance, there's always time for the greens chairman or the president of the club, right?

✓ **Telephone interruptions.** Instead of running to the phone, use an answering machine. Return calls when *you* have time. Again, try to limit the duration of conversations. (A telephone can be a "time gainer" too. In some cases, you can use it rather than writing a letter.)

▶ Meetings. If you call the meeting, you're in control. Clearly define the meeting's purpose. Start on time, stay on time, end on time. Several meetings in the same day? Schedule them back to back. If your presence isn't necessary, delegate the meeting to another capable person on your staff.

▶ Not having a daily written plan. Keep things simple. Don't try to "script" your day.

✓ Junk mail. Take care of it, return phone calls, and do routine reading during periods of the day when your energy levels are lower. For most people this is midafternoon.

Correspondence. Don't handle it and other paper more than once. If it's important, act on it or file it. If it's not, pitch it, says Williams.

Giving directions. Provide clear, easy-to-understand directions to co-workers and colleagues.

How important is the loss of 10 minutes here, another 10 there? Williams points out that the loss of just 30 minutes a working day adds up, by year's end, to the loss of 22 eight-hour production days. -R.H.

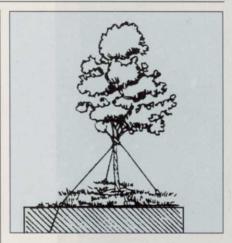
hole, to prevent the root ball from sitting too low in the ground.

"No plant should be planted deeper than it was at its original planting site," says Richard Rathjens, a technical advisor with the Davey Tree Expert Company, Kent, Ohio. "Err on the side of planting too high, as opposed to too deep."

The size of the planting hole should be at least two times the root system (for bare-root plantings) or root-ball diameter. The hole should be larger when possible and dug with sloping sides at about a 45degree angle from the ground surface. The slanting sides direct roots to spread horizontally, not downward.

If a hole is dug deeper than necessary, some fill soil should be added to the bottom of the hole. Stone, rocks or cement chips should not be added to the bottom of a hole dug too deep.

**Backfill composition**—Use the soil removed to dig the hole as backfill. Organic matter can be added to the backfill for sandy or heavy soils. No more than 10 to 20 percent of the volume should be



Trees with a diameter of 3 inches or moore don't need staking.

added because as the organic matter decomposes, the backfill settles in the hole, which causes the root ball to fall below ground level.

If the backfill is more than 20 percent organic matter, it changes the backfill's physical characteristics. Backfilling with

# ACCLAMA Because Escapes Happen

Multin starts woods-Multin has more bandits. It is attractive and helps suppress wood showth and protect trees from moisture loss. Mulch slowe and water evaporation, and provides brees with a consistent source of water.

Maleh also protects not systems form lemperature extremes by insulating roots builded self doesn't card as gelekky in the senter of worth as buildly in the summer as monutched soil. For maleh to be effection, it should be applied over storage destination

Makely should be two to the shop, and it should never b the tree a trunk. Dostmuch mulch retur and shour tathanija, and the rests a

You were ON GUARD all the way up and down the line. Certainly, the best MAXIMUM SECURITY measures were applied. But, as everyone knows, crabgrass and goosegrass are hard to control. 100% containment is impossible. Escapes can and do happen. It's part of the job. For arresting emerged crabgrass and goosegrass, ACCLAIM 1EC Herbicide is the smart solution. Multiple, low-rate postemergence applications set a dragnet that removes these grasses from the population without disrupting the rest of the turf.



Choose your approach: use ACCLAIM following a preemergence application or together with a pre in a tank mix. Either way, your pre remains effective longer into the season.

ACCLAIM controls from the 1-leaf stage to just before seed head formation. Safely used on tall and fine fescues, bluegrass and zoysiagrass,

ACCLAIM also lets you reseed fescue and ryegrass immediately after the spray dries. Escapes? No need for alarm. Not with ACCLAIM to lay down the law.

IMPORTANT: Please remember always to read and follow carefully all label directions when applying any chemical.

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soil that is lighter or better drained than the native soil can result in stunted or dead plants because roots may have difficulty growing into the soil surrounding the planting area.

The area around the soil ball should be watered to eliminate air pockets. Watering puts the soil into direct contact with the roots. Backfill and water then should be added alternately.

Mulch slows weeds—Mulch has many benefits. It is attractive and helps suppress weed growth and protect trees from moisture loss. Mulch slows soil water evaporation, and provides trees with a consistent source of water.

Mulch also protects root systems form temperature extremes by insulating roots. Mulched soil doesn't cool as quickly in the winter or warm as quickly in the summer as unmulched soil. For mulch to be effective, it should be applied before temperatures change drastically.

Mulch should be two to three inches deep, and it should never be piled against the tree's trunk. Too much mulch reduces air and water exchange, and the roots suffer.

**Avoid 'mis-stakes'**— One of the most common planting mistakes is improper staking. Many people don't know when to stake and when not to. As a general rule, most trees with a diameter greater than three inches don't require staking.

Proper staking helps newly-planted trees withstand strong winds. Staking anchors and supports young trees that can't stand alone after transplanting. However, staking is expensive and timeconsuming. So stake trees only when it is considered necessary to the tree's health.

If staking is done correctly, the tree roots and trunk will become strong enough to stand unsupported. Improper staking can damage or even kill a tree. Trees should be staked to bend with the wind only if they are unable to stand against the wind.

A common staking error is to use only one stake. Two stakes, with a flexible tie on each will provide better trunk support and reduce the potential for injury.

A tie should have a flat, smooth surface and be somewhat elastic to allow slight movement of the tree. Rubber hosing is a good staking material. Wire covered with a hose or tubing should not be used.

Workers should be well-trained. Workers not trained in tree care basics can damage trees. In that case, a professional arborist should be consulted.



#### **Environmental stewards named**

GOLF& ATHLETIC TURF

• Tim Hiers, Tim Kelly and Ted Horton/Mike Pifferini were named national winners in the Golf Course Superintendents Association of America's Environmental Steward Awards. The award recognizes superintendents and golf courses for their work to protect and/or enhance their local environment.

Hiers, super at Collier's Reserve Country Club in Naples, Fla., won in the private category. Kelly, super at The Village Links of Glen Ellyn (Ill.), won in the public category. Horton and Pifferini of The Links at Spanish Bay in Pebble Beach, Calif., won in the resort category.

Regional winners were also named: Steve Malikowski of Cape May National Golf Club, Erma, N.J.; Tom Schlick of Marriott's Golf Club at Shiloh Falls, Pickwick Dam, Tenn.; Larry Mueller of Minnesota Valley Country Club, Bloomington, Minn.; Jerry Coldiron Jr. of Lassing Pointe Golf Course, Union, Ky.; Darren Davis of Olde Florida Golf Club in Naples, Fla.; Ed Price of Coeur d'Alene (Ida.) Resort Golf Course;

Tom Janning of Rosewood Lakes Golf Course, Reno, Nev.; Mike Burris of Bay Oaks Country Club, Houston, Tex.; Frank Hutcheson of Mesquite (Tex.) Golf Course; Dale Miller of Barton Creek Resorts & Clubs, Austin, Tex.; Greg Williams of Cranberry Resort Golf Course, Collingwood, Ontario, Canada; and Paul Dermott of Oakdale Golf & Country Club, Downsview, Ontario, Canada.

The contest is jointly sponsored by the GCSAA, Ciba Turf & Ornamental Products, Rain Bird, Jacobsen Division of Textron and Lebanon Turf Products.

#### Athletic trainer on field safety

Mark Rogow, athletic trainer for the Pittsburgh Pirates, told STMA national conference attendees that there are definitely steps which field managers can take to help ensure safer playing fields. Here are some of his suggestions:

• For baseball games, use breakaway bases. He says injuries are reduced 80 percent when the new-style bases are used.

• In advance of any on-field emergencies, both the turf manager and the vehicle driver should know and use emergency vehicle paths while on the field.

Use padding on baseball outfield fences.

• "Record-keeping is very important for injuries—not only to players, but also to fans and other personnel."

• When anchoring tarps during rainstorms, he says you should be sure to count the tarp spikes so you don't leave any in when you take them up again.

• Watch the pitcher's mound area when the field gets wet. "There's more potential for injuries then than any other time, " Rogow says.

• Finally, use sunscreen for all employees—SPF15 or higher.

#### 'Par for the Course' continues on ESPN

• "Par for the Course," the GCSAA's national television program, with Thursday/Friday and Sunday air dates throughout the year. According to a GCSAA news release, "Every episode of 'Par for the Course' takes an innovative look at the world of golf by covering cutting edge topics...conversations with major golf figures, practical golf instruction and trends shaping golf's future."

The show will appear in the Sunday morning golf block on March 5, 12, 19, 26; April 2, 9, 23; July 9; October 22; November 5, 19, 26; December 3, 10, 17. It will appear adjacent to weekday golf coverage of the Paine Webber Invitational (May 5, 1:30 p.m.), the Cadillac/NFL Classic (May 12, 2:30 p.m.), the U.S. Open (June 15, 4 p.m.), the U.S. Senior's Open (June 30, 2 p.m.), the British Open (July 21, 2 p.m.), the Bell Canadian Open (Sept. 8, 2:30 p.m.) and the Senior Tour Championship (Nov. 10, 2:30 p.m.).

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TEMPO<sup>®</sup> Insecticide is an advanced generation pyrethroid. And while your customers may not fully understand the significance of that, the people handling the product do.

Workers understand that pyrethroid chemistry makes TEMPO effective while using 80% less active ingredient than other leading insecticides. That it has low mammalian toxicity. And that unlike organophosphates or carbamates, it is not a cholinesterase inhibitor.

Of course, your customers will appreciate the unsurpassed performance. TEMPO provides quick knockdown © 1995 Miles Inc. Printed in U.S.A. 95530A0017 and long residual control of turf and ornamental insects in a low-rate, low-odor insecticide.

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Creating landscapes that Mother Nature could never have imagined is a difficult task. Sometimes it seems almost impossible. Especially when you consider the tools, both physical and financial, needed to keep a project under control.

At John Deere Credit, we understand the obstacles you face every day. That's why we offer a variety of equipment-related finance plans with terms to match your needs. Whether you need a lease for that new

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piece of equipment, a highly specialized installment finance program, or revolving credit for parts and service, John Deere Credit is ready to help. Finding out details is easy. It only takes one call to your John Deere dealer. Or phone 1-800-468-8517, ext. 870.

Because while we may not be able to give you the recognition you deserve, we'll certainly give you the credit.



# LAWN & LANDSCAPE

## Focusing on 'lawn health' works for The Weed Man

## Here's a program to reduce pesticide use by stressing fertility, turf cultivation, and customer cooperation.

#### by Darcy Olds

• Our pest management strategy focuses on turfgrass health which helps our customers' lawns avoid pest problems.

A healthy, well-cultivated lawn, developed through proper fertility and cultural practices, eliminates much of the need for pesticides. They no longer become necessary as a cure for every lawn problem. They can be used sparingly and only when necessary.

Our main program consists of three applications per year of our own highquality, S.C.U. slow-release granular fertilizer blend. We strongly feel that three applications of our well-balanced fertilizer, which lasts 8 to 10 weeks, provide sufficient balanced nutrition throughout the growing season in Ontario.

Our customized fertilizer releases gradually through microbial activity in the soil. Microbes break down the material that coats the natural elements needed for plant growth. This helps ensure that grass plants aren't burned or stressed in any way.

**Can't forget aeration**—Along with providing balanced fertility, we believe that aeration is vital either in spring or fall or, perhaps, both. This eliminates

INSIDE



Quick couplings on spray guns help eliminate pesticide drips at the press of a button.



Technicians for the Weed Man talk with homeowners to remind them about proper mowing and watering.

thatch and alleviates compaction which provides resistance to many pests. It also improves soil porosity, increases deeper rooting and allows water, air and nutrients to penetrate turfgrass root systems.

Regular lawn cultivation and appropriate fertility throughout the growing season allow our technicians to monitor for pests or specific problems each time they are at a site. They map and record problems so that each lawn can be continually monitored.

When pest problems become significant enough to warrant control, we use pesticides, but the least amount necessary for adequate control. We commonly spotspray to prevent unnecessary use of pesticides.

The products we have chosen for use in our pest management programs have very low toxicity and residual potential. Our pest management strategy does not include fungicides. We believe cultural

Retaining accounts when people move, page 6L Balance the books in 35 minutes, page 10L Don't give away any of your time, page 14L Special Report on grass seed quality, page 17L

#### 4L Landscape Management, March 1995

## Nobody Believes a Landscape Fabric That Claims It's 10 Times Better Than Its Competition.

But What if 6 Leading Universities Say It?

No doubt, other landscape fabric manufacturers make all kinds of claims about their fabrics. They tell you they're the best. They tell you they're the most effective. They tell you no other fabric comes close.

But what they won't tell you is this: In independent research conducted by six leading universities across the country, only one fabric was proven to be more effective—in fact, up to 10 times more effective than its closest competitor.

The fabric? Weed-X\*. And it's studies like these that explain why Weed-X is the only landscape fabric on the market today that puts its money where its mouth is, or rather, where its claims are. Weed-X offers the industry's only weed-free guarantee, and it's very clear: If weeds penetrate our fabric, we'll refund your money.

So, who are you going to believe? The advertising and packaging claims of other fabrics? Or the researchers at Virginia Polytechnic Institute and State University, Colorado State, Iowa

State, the University of Kentucky, the University of Wisconsin and the University of Georgia? Maybe it's time you graduated to Weed-X.



**Dalen Products, Inc.** 11110 Gilbert Drive Knoxville, TN 37932 1-800-747-3256 "(In tests of the leading fabrics) the best weed-suppression recorded occurred with the use of Weed-X."

Landscape Architecture

"(Of 8 national brands tested) highest (weed) suppression was observed in Weed-X...Weed-X reduced Bermuda Grass significantly. Fabrics such as Weed-X, which limit root penetration, should be expected to provide superior weed control over fabrics that permit greater root penetration." Journal of

Environmental Research

"In tests over a 2 year period, Weed-X proved itself superior to other landscaping fabrics. Weed-X consistently stopped weeds from reaching the surface more effectively than any of the other national brands."

> lowa State University

In extensive university tests to compare the effectiveness of the four leading commercial landscape fabrics in controlling Nutgrass, the most impressive results by far came from Weed-X: Tested separately under pine bark/lava rock mulches, Weed-X was found to be 97%/92% effective. In contrast (the leading commercial brand) was only 14%/32% effective against Nutgrass in these tests.

> Virginia Polytechnic Institute and State University

In tests to evaluate landscape fabrics, Weed-X outperformed four national brands of landscape fabric in weed and root penetration.

> University of Georgia

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Weed Man technician monitors for any further pest problems on this lawn, such as chinch bug feeding.

methods best control lawn diseases.

**Customers help**—Perhaps the most important aspect of our program is our partnership with the homeowner. We do our best to educate each homeowner about watering appropriately and at the right time of the day, as well as mowing correctly and at an appropriate height. We've found that if customers mow high (2½ to 3 inches), most disease and weed problems are less likely to occur.

AWN & LANDSCAPE INDUSTRY

Since it's not possible for us to be on a customer's lawn daily, we ask that each customer keep a sharp eye out for any developing problems, and notify us immediately so that we can adequate control the problem. The coop-

eration of homeowners promotes a healthy lawn and contributes greatly to our integrated approach to lawn care.

When it becomes absolutely necessary to control insects in a lawn, we use such things as day/degrees and indicator plants to determine the best time for control.

Day/degree computations reveal the stage of a lifecycle of a particular insect. They allow us to determine the best time to apply control measures. Indicator plants, such as the horse chestnut and the vanhoutte (spirea), help us identify lifecycle stages of insects such as the European chafer.

Along with routine inspections, which take place each time one of our technicians is on a lawn, a thorough inspection is performed each year in July. It includes a complete examination of the lawn for signs of insects, weeds or disease as well as a detailed observation of the homeowner's effort to maintain the lawn through adequate cultural practices.

All information from the inspection, including maps and pest level predictions, help us build a valuable and on-going history of each lawn.

-The author is a technical representative of The Weed Man, a company founded in 1970 by entrepreneur Des Rice.

#### **Retaining a lawn when the customer moves**

## Why it's better to develop a strategy to keep a client, or property, from season to season

 Successful lawn care business owners strive to retain multi-season customers.
 These are usually their most profitable customers.

But what happens when these customers move away? This is a problem that Robert Andrews regularly faces in the growing communities surrounding Indianapolis.

Andrews is co-owner along with his wife, Jennifer, of The Greenskeeper, Carmel, Ind., and a past president of the Professional Lawn Care Association of America (PLCAA). Andrews also heads Andrews and Associates, a small business consulting firm. It was in this capacity that he addressed a group of LCOs in Orlando recently.

Andrews told the LCOs that relocations because of job transfers are common enough in his market area to have caused him to develop a strategy to retain these lawns. And that's the key in these special instances—keeping the property when the customer leaves.

The Greenskeeper delivers a complete history of the lawn to the real estate per-

son to give to the next owners. The professionally designed lawn history becomes another selling tool for the seller "because it demonstrates the care that's been given to this property," says Andrews.

Lawn care business owners, said Andrews, know that it's less expensive, and more profitable, to retain customers (or their lawns) than to find new ones.

Here are some reasons why:

 Retained properties are, comparatively, weed-

free, and less expensive to treat than startups.

✓ They usually result in fewer service calls.

They're already part of a route.

Credit and collections improve.

✓ Long-term clients are more apt to buy add-on services.

Often, through referrals, they result



y: LCO/consultant Bob Andrews: Why not reward a Retained properties customer for getting you another customer?

in new business.

Andrews also said he's not hesitant to reward any customer for referring another customer to The Greenskeeper. This reward, for instance, may be \$20 off the next application.

"Who wouldn't pay \$20 for a new customer?" he asked.

-Ron Hall

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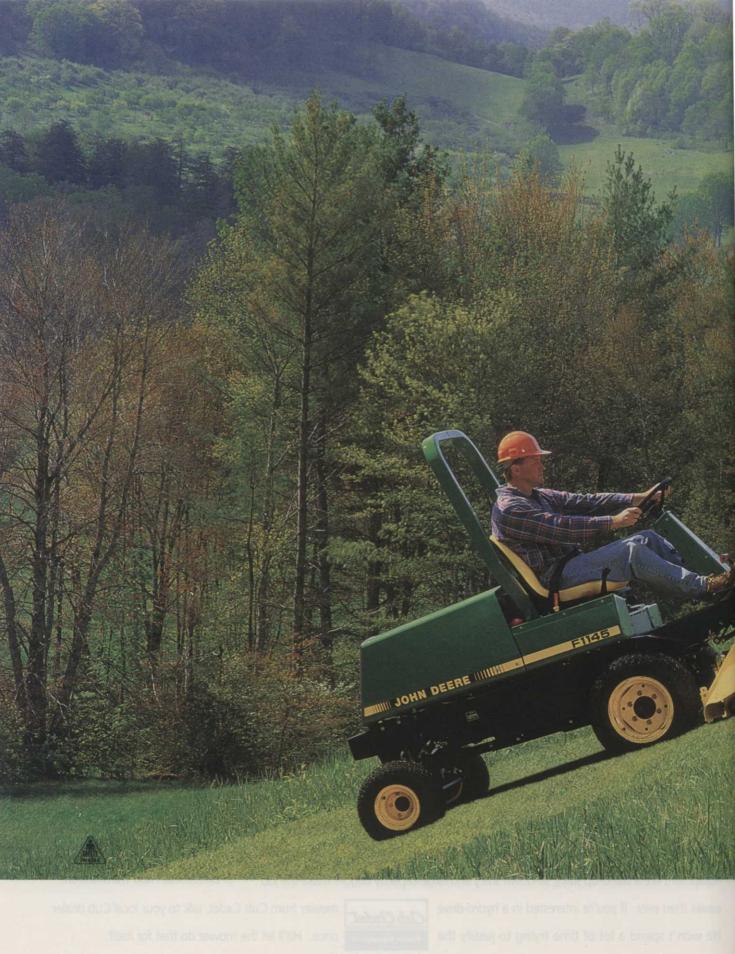
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#### Balancing company checkbooks

#### A bank reconciliation should take about 35 minutes for a small company.

by Dan Sautner

• Unless you keep your cash in the "sock" or "mattress" vault, you have to work with a monthly bank statement. The balance on that statement and the amount of money you actually have available are only the same by sheer coincidence.

This article will give you a course of action designed to help get—and keep your checkbook balance under control.

To prevent errors from causing you any embarrassment, always check your deposit receipts at the teller's window to ensure that the bank gave you proper credit. Double-check that you have recorded the proper amount for each check that you write and record those charges that go through the bank automatically.

Balance your checkbook immediately after receiving your bank statement. It's not too difficult to do:

LAWN & LANDSCAPE INDUSTRY

**1)** Verify all of your deposits to be sure that your figures and the bank's agree.

2) Verify all of the checks that cleared to confirm that the proper amount was deducted from your account (and that you recorded the correct figure).

**3)** List all of the checks that have not cleared as of the statement date.

4) List the deposits made after the statement date.

**5)** Deduct from your checkbook balance all bank charges, including monthly service charges, checkbook printing, overdraft charges, ATM charges and miscellaneous fees.

6) Add into your balance any bank credits, such as reversals of previous charges.

**7)** To your balance after bank charges and credits, add outstanding checks (#3) and deduct outstanding deposts (\$4). This figure should equal the bank's figure at the end of the statement period.

If your figures disagree with the bank's, don't accuse the bank of making the error.

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"With a Wells Cargo Behind... You Never Look Back!"

It's usually not their fault. Ninety-five percent of all errors are made by the customer. And most of the bank's errors should be caught by the customer at an earlier time. It's your responsibility to check your receipts and to balance your checkbook each month.

If, however, the bank has made an error and returned some checks, ask the bank manager to write letters to the payees explaining that it was not your fault. Also, ask them to reverse the overdraft charge(s) as well as credit you with the charges of your payee. Also ask if they can remove this overdraft from your record.

When you approach the bank with an unbalanced checkbook, its personnel will assume that you had balanced your statement the previous month. Generally speaking, a bank reconciliation should take about 35 minutes for a company that writes about 50 checks a month. And if the bank employee cannot find an error, you should feel safe in assuming that the bank's figure is correct.

Sometimes, you have to adjust your check balance and move forward. Errors can always be found. If all else fails, start from the most recent month you reconciled your bank and recreate the balance.

—The author is chairman of Padgett Business Services, which provides accounting and tax services. For more information, call Padgett at (706) 548-1040.

## Corrective measures

If you and the bank don't agree, take these steps:

**1)** Use a printing calculator to double-check addition and subtraction.

**2)** Check to be sure that you carried the correct figures from page to page.

**3)** Make sure that the actual amount of each check equals what you recorded in your checkbook. If the amount you disagree with the bank is divisible by nine, you might have committed a transposition error (entering 123 as 312, etc.).

**4)** Go through steps one through seven again. (One common error is missing an outstanding check from two or more months back.)

5) Have someone else go over the checkbook for you.

**6)** Go to the bank and ask for their help in finding the error.

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In fact, in five of six categories Scag was ranked number one among 11 brands of mowing equipment. Number one for quality. Number one for serviceability. Number one for warranty. Number one for dealer/ distributor support. And, tied for number one for parts availability.

The one place Scag didn't finish first was in the lowest price category. But then, you get what you pay for.

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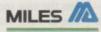
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LAWN CARE INDUSTRY

## Beware 'freeballers!'

#### This landscaper charges for every minute of his time, without getting prospective clients hot under the collar.

#### by Jay Turnbull

As professionals, we approach our work with great pride and diligence. We never quite know exactly what prospective customers want, unless a detailed plan has already been developed. Our job is to figure out what they need, make a proposal, and close the sale.

Sometimes, this takes more than a one-time meeting, requiring extra work to figure pricing and draw plans and designs. Many times, we need several hours to assimilate the needs and work up a new proposal. Most of us don't charge for that time. But then we make the proposal, only to find that the customer is shopping for the best price or trying to find out how to do the job so he can get a "non"-professional at a fraction of the cost.

Sound familiar? Frustrating? You bet! For lack of a better description, I call this "freeballing."

**Every minute has value**—Joel Lerner, marketing guru who was the keynote speaker at the Professional Grounds Management Society conference a few years ago, said we must not spend any time with our customers without charging them for our expertise. And rightly so. But how do we make the transition from giving free advice to charging for our time? Let me share with you what I am doing.

I have adopted this philosophy: no more freeballing! It has not come easily, nor has it come quickly, but over a period of time I have few cold contacts. Almost everyone I talk to has been introduced through another customer or has seen my work, or heard me talk, or read an article I wrote. So when they talk to me, it is because they want something that I have.

Warning! What happens next may be hazardous to your pocket book.

Most of us are flattered and immediately go into the sales mode and relinquish the expertise that the prospective customer is seeking. Then the inevitable question: "How much will it cost?"—the time when we discover whether the individual is shopping for information or genuinely wants you to fix his problem. When to proceed—Let's back up. I have tried to stop at the warning and take charge of the situation differently. I remind myself what the first contact is about: to determine whether or not to go any further with the client. And the meeting should be fairly brief, so I don't charge for it.

I explain that I work for x dollars an hour for planning and consultation and



Turnbull: If you are a pro, you are paying your dues.

design, with a three-hour minimum. I also give them a ballpark figure on how much this phase will cost them and define the limits of that estimate. If, after the introduction, the prospect and I decided that we can do business, the clock starts. That means that I can now charge for the time I spend on site taking dimensions and making notes for the job.

In some cases, if I sense some resistance to this, I offer a credit toward actual work done at a future time. So I have—but not always—deducted consultation/design time from a landscape job on a pro-rated basis. But even when this is offered, I usually add my time in as miscellaneous costs in the bidding process. It all works out about the same. If they feel like they are getting a better deal that way, so be it. Perceived value is what a customer wants.

Is it worth it?—Now, if I go into a potential job knowing that I am bidding against a competitor or competitors, as was the case recently, I may not be able to charge right away. That's when I make the decision whether I want to work with the client or not, and what it's worth. In the recent instance, I decided that I wanted to work with the customer. I wanted to go head-to-head with my competition, so the challenge superseded the couple of hours of unpaid time. I got the job, and will get new leads from this customer. And it felt good to know that I had the best plan for him.

Another difference is in commercial accounts. I have not had many commercial accounts pay me for time spent in proposing work, but I have almost always built it into the bid. I don't get all the jobs I bid, but the faster we educate everyone in this country, the sooner we will all overcome this problem.

The key is professionalism.

You deserve it—If you are truly a professional, you have paid and are paying your dues to be known as one—and that costs money. But it saves your customers money! I can do a job for a reasonable price, make a profit, and do it right. Nonprofessionals can do the job, do it poorly, and the customer will end up having to spend more to correct the problems they bought the first time. I can also tell a prospective customer that I cannot do the job he wants, either, because it is not my area of expertise, or because the way he wants it done is not right.

You deserve the compensation you have earned, even if it is merely proposing a job. All you have to do is sell yourself and your expertise, and the rest comes easily. But if you get into the trap of giving your time away, people will take advantage of you, and have less respect for you.

Finally, you should determine who your desired customers are. Real professionals want real professionals to do their work. Do-it-yourselfers shop price and will accept any quality job if the price is cheap enough. Don't get caught in the trap of low bidding jobs to compete with the low bidders. That philosophy puts you in their court, the only place they know where to play. I think we are better off creating our own court. Be where no one can touch you. Be the best. Be a professional.

And what is a professional? It is someone who is never satisfied that he/she knows everything. He/she is open-minded, active in industry organizations, attends educational conferences regularly, and reads trade magazines. A professional is a community leader, and is proud to show off his or her work.

-The author is a resident of North Platte, Neb., where he has his own landscape consulting business.

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## ALCA/NLA cooperate on landscape cost study

• The Associated Landscape Contractors Associatin (ALCA) offers its 1994 Operating Cost Study. The study was undertaken as a cooperative effort by ALCA and the National Landscape Association (NLA).

The report provides detailed financial results of landscape contractors. The results profiled in this report are based on income statement, balance sheet, and operating data provided by participating ALCA/NLA members. This management tool is designed to provide the resources which enable landscape professionals to evaluate, plan and better manage their businesses.

The study represents the most comprehensive collection of financial data ever compiled by the landscape contracting industry. It's designed to help the three primary industry groups—exterior landscape construction, landscape management and interior plantscape. "Everyone in the landscape industry needs a copy," says David Minor, president of Minor's Landscape Services, Fort Worth, TX. "It is a prerequisite for doing business in the '90s."

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The study represents the most comprehensive collection of financial data ever compiled by the landscape contracting industry.

The ALCA/NLA Operating Cost Study is available for \$25 for ALCA members and \$45 for non-members, plus 5 percent shipping and handling. To order copies, call or write ALCA, 12200 Sunrise Valley Drive, Suite 150, Reston, VA 22091; (800) 395-2522; fax: (703) 620-6365.

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Senior Editor

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## SPECIAL REPORT: FOCUS ON GRASS SEED

## It's not just a 'bag of grass seed'

#### A lawn or landscape pro will know the best varieties for your lawn.

About as exciting as watching grass grow?

Everybody's familiar with this saying. But the truth is that watching grass grow can be exciting.

After all, who isn't excited with increasing the beauty and value of their property.

Unfortunately, most homeowners don't do a good job of installing or renovating their own lawns. They discover that it's hard work.

But there's often another factor working against homeowners—selecting the right grass seed.

**Consider your options**. Homeowners have several choices when buying grass seed for their lawns. They can:

 Educate themselves about the best and newest varieties of seed for their lawn. (Then hope it's available at their store.)

2) Rely on the recommendation of a retail clerk who may or may not know more about grass seed than themselves.

 Buy whatever's available and/or least expensive.

 Or consult with an established lawn professional whose reputation is built on using quality seed and providing quality service.

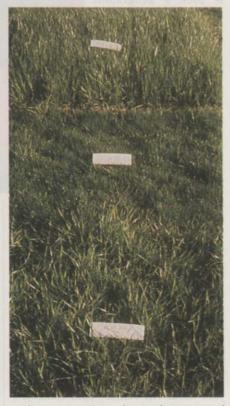
Most do-it-yourselfers don't realize that some of the pre-packaged seed available in

retail stores can *never* give them the lawns they want, no matter what.

Too often one of the prime ingredients of these mixtures is annual ryegrass seed. In fact, the least expensive retail mixes contain significant percentages of annual ryegrass.

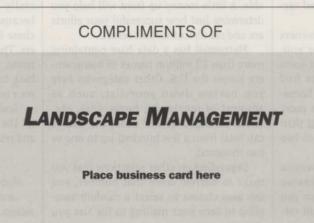
Because it's less expensive to produce, it's sold at a bargain price. Unfortunately it's the seed anybody buying solely on price chooses.

Buy the best. Almost



without exception, the performance of annual ryegrass in a home lawn is disappointing. As its name suggests, it is temporary unlike "perennial" ryegrass which can—especially the new, improved varieties—yield a beautiful lawn in many parts of the country.

Annual ryegrass germinates rapidly, grows explosively and requires frequent mowing. Since it's so quick to germinate



Compare the dense, finer texture of the center grass plot planted improved varieties of turfgrass with the results obtained from off-the-shelf retail mixtures on either side of it. Major seed producers are constantly improving seed through testing in such plots.

Photo by International Seeds Inc., Halsey, Ore.

(a plus for its use when rapid soil stabilization is the goal) its leaf canopy hinders germination and development of more welcome and persistent types of grasses like Kentucky bluegrass, perennial ryegrass, and the new fescues.

But, most disheartening, annual ryegrass thins then, usually, disappears under summer's heat. The bare soil that it leaves behind invites weeds.

So what's the best grass seed for a home lawn?

There's no single best variety.

Actually, the new types of Kentucky bluegrass, the improved perennial ryegrasses and the constantly evolving fescues are all excellent choices.

A homeowner can check the contents of seed packages themselves for particular varieties and their percentages in the mixture or blend.

> A better choice is to hire a reputable lawn or landscape professional who will know exactly the best grasses for each individual home lawn.

> They'll also know how to establish and maintain the lawn so that it gives the homeowner pleasure year after year with a minumum of problems and maintenance.

With grass seed, a bargain price is rarely a bargain.

## The best direct mail marketing programs reach *your* target group

LAWN & LANDSCAPE INDUS'

Marketing today is becoming more tailored to *individual* buyers. Direct mail marketing helps you find the best prospects.

#### by Julie Springer

In the landscaping business, direct marketing presents a world of opportunity.

✓ It's cost effective. It's getting trickier to keep costs down, and in the lawn and landscape industry, certain costs just keep on coming. Equipment, fertilizer, overhead, seasonal employees...the list is long. While giving up advertising altogether may seem like the easiest way to cut costs, it is more likely that advertising *less* and advertising *smarter* is as a better alternative.

✓It's appropriate. Lawn care and landscape service providers don't need to advertise in the local paper only to have half of the papers delivered to apartment dwellers. Direct marketing allows you to select homeowners, an immediate advantage.

✓ It works. Thousands of lawn and landscape professionals with large and smaller companies have benefitted from direct marketing, and many are likely to have elaborate databases of existing customers and potential customers.

With direct marketing, you in effect purchase the names and addresses of persons whose lives and lifestyles are such that there is a need for lawn care services: some single family homes, recently moved persons, those whose incomes exceed certain minimums; senior citizens.

If you've recognized that homeowners are a highly profitable market for you, consider this: about 4 million Amer-icans buy a home each year and need to find local merchants and services. New homeowners will spend eight to 10 times more in the first six months after moving than an established resident will spend in two years.

Established homeowners have service needs as well. In general, the homeowner is a preferred customer profile when you consider income, buying needs, credit rating and longevity as a customer. Who might buy? The first thing you need to do is pick a geographic region you would like to target.

Select ZIP codes that represent the area of your business or your trading area.

For example, if your company is located in an industrial park surrounded by newer developments and apartment buildings, your best market may be found in one or two of the

older, surrounding communities with more property per dwelling.

Consider what other household characteristics or information might help make your list more useful, such as phone numbers. Knowing both phone numbers and addresses lets you execute a combination mail/phone campaign.

You can also narrow your search to include people who are known to respond to direct mail.

The next step in this system is to call a list compiler or broker who can best meet your needs. The Yellow Pages contains a "Mailing Lists" category. A trip to the library can also be very useful. The Standard Rate and Data Service lists homeowners by ZIP code.

A list compiler, such as Metromail or Polk, is staffed by people who are experience in dealing with customers less familiar with the ins and outs of the list business.

Direct mail is an advertising medium whose results are measurable and quantifiable. A little money up front will help you determine just how successful your efforts are and see almost instant results.

Metromail has a data base containing more than 29 million names of homeowners across the U.S. Other categories help you narrow down your list, such as amount of mortgage, home cost, etc. When arranged by ZIP code, the names can total from a few hundred up to one or two thousand.

Depending on other selections that you make to narrow down that number, you can also choose to select a random sampling to keep your mailing to the size you choose.



Each list provider has a different way of handling small business orders. Metromail provides names to small businesses without the standard industry minimums (5,000-10,000 names per order at about \$65 per thousand).

Instead, as a small business person, you can receive those names for about \$50 for 200 of them (25 cents per name, with a \$50 minimum).

You also need to consider the cost of mailing information. A post card or letter is appropriate, depending how much you want to say. If you have 300 postcards printed, you will pay a quick-printer about \$65 for printing, and \$63 for postage.

The standard benchmark for a direct mail campaign is a two percent response rate. Your response rate may be higher or lower, depending somewhat on how accurately you assess your customer profile, but two percent is a reasonable, conservative figure to use for planning purposes.

The lawn and landscape industry especially lends itself to direct marketing because it is a service which people purchase hundreds of times as property owners. The dollars that it costs you to buy and name, and send out a postcard will come back to you many times over the course of your relationships with customers.

And when they move, you may "inherit" the business of the new homeowner, and retain the loyalty of the mover.

-The author is a consultant with Metromail, a supplier of direct mail lists and other helpful information for businesses. For more information, call Julie at (800) 316-2637.

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#### 'High' prices instill loyalty, place value on the service

Consultant Joel Lerner says landscapers shouldn't be afraid to seek a fair return for their efforts.

• Some landscape contractors follow detailed formulas to price their work. Some use a time-and-materials approach, or, perhaps, a combination of both.

Joel Lerner, owner of Environmental Design, Chevy Chase, Md., says there's a third pricing method that can yield surprisingly good results. He calls it "getwhat-the-market-will-bear." It's more intuitive than scientific, he admits, but it keeps a savvy landscape pro from leaving money on the table.

It's built on his belief that:

Iow prices produce no loyalty, and

a professional should make money on every service he/she provides a client. You meet with the potential client at the job site and you eyeball the property. Your experience tells you about what the project should cost. But you don't mention price until the prospect brings up the subject.

WN & LANDSCAPE INDUS1

"You never mention price until it's brought up," advised Lerner. "You're focusing on value at this point, not price. Value is the important thing. The client has to bring up the issue of price."

When you do provide an estimate, you value your services on the high side, at least what you consider is high because you really don't know what the prospect is planning on spending.

If the prospect thinks the price is too high, you can begin listing the ways the project can be done for less money. Perhaps you can suggest using less mature plant material, or doing the project in phases. There are lots of ways to work it.

Added Lerner, "It's a lot easier to lower a high price than to raise a price that's too low."

Also, negotiation keeps a landscaper from getting that I-could-kick-myself feeling by offering a price that a prospect gobbles up because the prospect had planned on spending a whole lot more.

Lerner says he's used formulas, time andmaterials, and get-what-the-market-will-bear but he much prefers dealing face-to-face.

"I'd rather be with the client on the job site and get a chance to test the waters," said Lerner. "If you don't at least try to see what you can charge, you'll never know what you can get."

Lerner thinks landscapers generally are on the low end of the professional pay ladder, taking a back seat to other skilled trades people like electricians, carpenters and plumbers. That's because they don't educate clients of the value of their work.

"I'm going to get a little lower price from some clients and a little higher from others and hopefully it will work out that I get a fair rate," said Lerner.

"If you're landing every job, you're not charging enough," he added.

—Joel Lerner conducted a five-city, "Leaving No Stone Unturned" series of seminars this past February. He made the above comments in Cleveland. To contact Lerner, call him at (301) 495-4747.

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cultural Products Division

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## The new pick-ups: offices on-the-go

#### by Arthur Flax

■ Landscape managers shopping for new vehicles in 1995 will be pleased to find that truck manufacturers have responded to their needs with bigger, more powerful models, equipped with interior features that can turn their vehicles into mobile offices.

For example, John Kelley of Chevrolet says, "As a new feature, we have an (optional) pivoting writing desk in the center console of full-size pick-ups. Also, as standard equipment, we have a couple of 12-volt outlets for computers and cellular phones, among other things. Those were needs expressed by our commercial customers, and we addressed them."

Chrysler and Ford pick-ups offer similar interior features suited for landscape managers.

Among new trucks for 1995:

Chevrolet has a large selection of new models and improvements. GMC offers similar new models.

The all-new Chevrolet Blazer Sport Utility Vehicle (SUV) is of interest to contractors who need personal transportation in addition to a work vehicle. Available in two- and four-door models with rear- or four-wheel drive, the new Blazer has exceptional cargo capacity.

Driver's-side airbags are now standard on virtually all light truck models, with the exception of certain extra-heavy duty versions. Other safety features include standard four-wheel antilock brakes on many models. S-Series trucks also have daytime running lamps to make the trucks more visible.

The full-size K-Blazer SUV has been

renamed Tahoe and there is a new fourdoor version.

Ford has introduced a new diesel drivetrain that is of great interest to landscapers who typically haul heavy loads of soil or rock. You can now order F-250, F-350 and F-Super Duty pick-ups (or Econoline E-350 and Super Van models) with Ford's 7.3-liter direct injection Power Stroke turbo diesel, mated to an automatic trans-



Dodge Ram 3500 4x4

Mazda B-Series truck for 1995

mission. Previously, only a manual transmission was available for the 210 hp engine, introduced last year.

The Ford Ranger compact pick-up also gets a standard driver's airbag. A passenger airbag is optional. Four-wheel, antilock disc brakes are standard on Ranger models with the 4.0 liter V-6 engine.

All Ford light trucks have a driver's air bag as standard equipment and are covered by 24-hour roadside assistance.

Dodge has made a Club Cab available for its popular Ram pick-up, introduced in 1994. The Club Cab's interior adds 20 inches in length to the standard Ram cab, accommodating six passengers with a full rear bench seat.

The Ram Van gets a driver's airbag and optional four-wheel antilock brakes on the commercial version.

continued on page 20

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#### THE ECHO PE-2400 PERFECT EDGE®.

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There's also an exclusive wheelmounted height adjustment. In contrast, ordinary edgers have adjustments which rotate around the gear case. In time they can get jammed with dirt and debris that could cause enough damage to require replacement of the entire lower end.

The problem of flying debris is minimized, too, with an ingenious rubber debris shield (Patent Pending) that's split in the center. It gives added protection by more closely following the contours of the ground or curbing. The wheel is smooth, not treaded. So it won't collect mud or dirt in wet conditions.

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piston ring engine. With Pro-Fire<sup>®</sup> Electronic Ignition and purge pump-equipped carburetor for fast starts and dependable performance. The Echo PE-2400. It'll make you forget every edger problem you've ever had.

What

For the name of your nearest Echo Dealer, call 1-800-432-ECHO (3246) or write: Echo Incorporated, 400 Oakwood Road, Lake Zurich, IL 60047.



#### **TRUCKS** from page 18

Toyota's T100 is offered with an extended cab and more powerful engine than ever. The mid-size truck gets a 3.4 liter V-6 that boasts 190 hp, up 40 hp from 1994. A 150 hp, 2.7 liter four-cylinder engine is also available with a new four-speed automatic transmission.

Nissan pick-up trucks get new graphics (XE models) and a better integrated center high-mounted stop lamp on the back of the cab. Rear antilock brakes are now standard on all two-wheel drive pick-ups, and a limited slip differential is standard on the four-wheel drive SE V-6 pick-up, which also gets bigger tires.

Mazda's 1995 B-Series pick-ups get a driver's side airbag, a redesigned instrument panel and a more responsive 2.3 liter four-cylinder base engine with 112 hp, up from 98 hp.

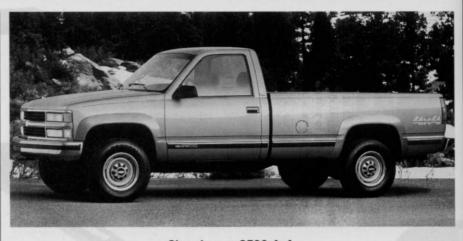
**Popular stuff**—Truck manufacturers says the most popular pick-ups for landscapers are larger ¾-tons like the Dodge Ram 2500, the Chevrolet C/K 2500 and the Ford F-250. A ¾-ton model can typically carry payloads of 3,000 lbs.

Large Chevrolet C/K 3500, Dodge Ram 3500 and Ford Super-Duty pick-ups are best if you typically carry topsoil, stone or other heavy loads. They can carry up to 5,000 lbs.

Compact pick-ups are often used for towing equipment of up to 3,500 lbs.

Dodge Dakota and Toyota T100 intermediate-sized pick-ups and the so-called ½-ton full-sized pick-ups, including the Dodge Ram 1500, Chevrolet C/K 1500 and Ford F-150, are suited for businesses that need a larger bed (eight feet) for equipment and a vehicle to do towing or light snow plowing.

**Incentives available**—Among incentives currently available, Chevrolet offers a choice of \$300 cash allowance on most light truck models; pick-up truck toolboxes or van storage bins from Adrian Steel or a free three-year/36,000-mile maintenance



Chevy's new 2500 4x4

plan (including frequent oil changes). Certain vehicles are excluded.

Ford offers incentives, as needed, to control its inventory of vehicles.

Dodge offers a \$500 incentive to Farm



Mazda B-Series interior

Bureau members on select Ram and Dakota pick-ups and Ram vans.

Japanese manufacturers typically offer their dealers incentives to sell slow-moving light truck models. Also, Isuzu has traditionally provided dealers with substantial incentives to encourage the sales of vehicles used in businesses such as landscaping.

Dealers advise you to identify yourself as a business customer and ask for special rebates available only to businesses. All dealers can offer business rebates, but dealers that specialize in business customers are more likely to be aware of them.

Chevrolet, for example, has a select group of 500 "Commercial/Specialty Vehicle" dealers specially trained and equipped to sell and service small business customers. Ford's "Mainstreet U.S.A." dealers, with 1,100 outlets, can offer similar specialized service to landscapers.

**Prices up**—Incentives aside, truck prices have risen two to three percent on new domestic 1995 models. Prices can be compared with the following for regular, mid-size and compact pick-ups:

• Dodge Ram Club Cab 2500 (155-inch wheelbase)....... \$19,722

• Toyota T100 (with 3.4 liter V-6)......\$14,498

Nissan Standard (compact pickup)
 ......\$9,929

-The author is a freelance writer whose business, FlaxSun Power Fast Sunner, is located in Denver, Colo.



Nissan 4x2 XE



Ford 250 Series

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Circle No. 133 on Reader Inquiry Card



To offset the normal horizontal look of a landscape, try ornamental grasses. Some grow to 12 feet high and most are low maintenance.

Ornamental grasses are an attractive, low-maintenance alternative to annual and perennial flower beds that are becoming more popular throughout the green industry, according to James Snyder, president of Riverbend Nursery, Reiner, Va.

Golf course superintendents are using ornamental grasses to provide a vertical beauty to their courses, and landscapers are finding that they are extremely popular among homeowners.

"They come in a whole array of colors and textures," says Snyder. "They have a minimal fertilizer requirement, but you do need to apply some fertilizer at establishment. Ninety percent are literally carefree; you just cut them down in February."

Although a few species are big-leaved and bold, notes a booklet from Longwood Gardens, most have a uniquely fine-textured foliage that provides stunning contrast to broad-leaved landscape elements. They are particularly effective, says the booklet, when backlit by the sun.

Snyder notes that ornamental grasses exhibit two growth patterns: most are clump-type, but some others are spreading types. The clump-forming grasses, Snyder observes, do not aggressively spread; spreading types can colonize large areas.

Most grasses are best purchased in spring before they attain much growth, Longwood Gardens claims. Although retail garden centers are offering an increasing selection of container-grown ornamental grasses, many of the newer or rarer cultivars are only available through mail-order nurseries. Table 1 provides a list of some popular ornamental grasses, but be sure to check with your supplier or nursery to make sure you're getting what you want.

If the plants are container-grown, Longwood Gardens recommends that you "knock off some of the soil mix and loosen up the roots to encourage establishment into your soil. Field-grown plants, when available, are usually in heavier soils and may establish more readily." Most ornamental grasses flower from July through November in colors ranging from white through pink and purple. Landscape managers who have tried them in golf course, commercial and home landscape settings are sold on them.



Snyder: Most ornamental grasses are 'literally care-free.'

Here are Riverbend Nursery's planting recommendations:

Site preparation: Remove all grass and weeds from seedbed, using either two continued on page 24

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you need it, without the expense of a large inventory. It's easy. Make Terra Professional Products your single, convenient source for insecticides, herbicides, fungicides, adjuvants, fertilizers, micronutrients, turfseed and much more. Choose from a line-up that includes major brands as well as our own high-quality line of Terra Professional Products. All it takes is a phone call. You'll get the products and service you want *and* the agronomic advice,

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**From Terra** 

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Common name	Scientific name	Size	Color
Giant miscanthus	Miscanthus 'Giganteus'	G	orange
Feather-reedgrass	Calamagrostis epigeios	M-L	n/a
Wild oats	Chasmanthium latifolium	М	green/gold
Ribbongrass	Phalaris arundinacea	М	white
Hakonegrass	Hacakonechloa macra	М	orange
Japanese bloodgrass	Imperata cylindrica	М	bright red
Blue switchgrass	Panicum virgatum	L	blue/gray
Maidengrass	Miscanthus sinensis	G	copper
Ravennagrass	Erianthus ravenae	G	blue/gray
Silver plumegrass	Erianthus alopecuroides	М	silver
Hardy Oriental fountain	Pennisetum orientale	М	white/pink

#### Key to size abbreviations: M=medium (1-3 feet); L=large (3-6 feet); G=giant (6+ feet).

Sources: "Oriental Grasses at Longwood Gardens" and Riverbend Nursery

**ORNAMENTAL** from page 22 applications of a broad-range herbicide or sterilizing the soil with a sterilant.

Amend the soil if necessary. In a very heavy clay soil, in a sandy loam topsoil or sand. In a lighter soil but one with little organic material, peat moss is recommended.

Incorporate a low nitrogen or balanced fertilizer into the rootzone. Slow-release fertilizers can also be used, but at reduced rates when incorporated into the soil.

**Spacing:** Distance between plants is based on the size of the plants, the expected growth rate and the budget. See Table 2 for general spacing recommendations.

**Mulching:** Use a layer 2-3 inches thick the first year, applying additional as the original mulch decomposes. Mulches deter weeds, retain moisture and prevent the plants from heaving during the first winter.

Herbicides: Use a pre-emergent at the time of planting; post-emergents can be sprayed around the base of many varieties. Pre-emergents help prevent germination of unwanted weeds, and post-emergents control weeds and unwanted other grasses that may compete with ornamental grasses for nutrients and/or spoil the appearance of the bed. Read and follow all label directions.

---"Ornamental Grasses at Longwood Gardens," compiled by Rick Darke and edited by Betsey Ney (1993), is a 32-page booklet available for \$2.50 from Longwood Gardens, P.O. Box 501, Kennett Square, PA 19348.

#### Table 2.

#### **Plant spacing**

Spacing	Plants/sq.ft.
8" centers	2.25
10" centers	1.44
12" centers	1.00
15" centers	.64
18" centers	.44
24" centers	.25
36" centers	.12

Source: Riverbend Nursery



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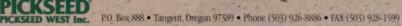
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Circle No. 126 on Reader Inquiry Card



## **Post-emergence weed control** in cool-season turfgrasses

Site preparation is an important prologue to effective pre-emergence and post-emergence weed control.

by John McNamara, Ph.D. University of Nebraska

■ Weeds are plants...they just grow where they're not wanted.

A white clover plant may be considered an integral part of turf by some, but others view it as an undesirable weed.

Weeds are a major problem in turfgrass, and are usually the most visible pests. Weeds destroy aesthetic and functional aspects of turf and perhaps more importantly, compete with turfgrass for water, nutrients, light, carbon dioxide and space. Correct identification, knowledge of plant characteristics and lifecycle play an important role in preventing and controlling common weeds.

Proper management fosters a denser, more vigorous turf which is pleasing to the eye and also discouraging to invading weeds. The presence of weeds is often a sign of turf which has been neglected or improperly managed.

When weeds invade our turf, we often seek a guick solution by using a wide array of available herbicides. Many of these applications, although effective, cannot

provide longterm control of many weeds which may be present. Continued herbicide use, without correcting conditions leading to weed encroachment, Yarrow



can lead to weed problems that are even more persistent and difficult to control. A well balanced approach, including proper identification of weeds as well as cultural, mechanical and chemical control, will minimize weed competition.

Cultural practices-One of the most common cultural mistakes that is made in poor turf and weedy turfgrass is selecting non-competitive turf cultivars. Adapted turfgrass cultivars are more tolerant of environmental stress and are less likely to be damaged by pests than non-adapted grasses.

Turfgrass selection should be based on species and cultivar evaluation conducted over a number of years and under varying conditions. University recommendations are mainly based on such regional trials. Use mixtures (two or more species) and blends (two or more cultivars rather than a single cultivar). This spreads adaptability as it will ensure a broad genetic base and adaptation to a wide range of growing conditions. Mixtures and blends will maintain better stand density and compete more readily against weed invasion than unadapted grasses.

Using adapted cultivars, proper mowing height and frequency, fertilization, irrigation, and proper drainage are all cultural practices which will promote a competitive turf.

Mechanical control-Tilling prior to turfgrass establishment can be considered one example of mechanical control. The seed bed should be prepared a few weeks before seeding. A final shallow till just prior to seeding should be done to destroy any weed seedlings that have germinated since the last tillage operation.

Soil coring or aeration can alleviate soil



Plantain

compaction, enhance rooting, increase water penetration, enhance nutrient uptake and minimize thatch build-up. Certain weeds, such as prostrate knotweed, are more competitive when soils are compacted. Soil aeration, when turf is actively growing improves turfgrass growth.

Mowing, another example of mechanical control, is basic to turfgrass culture. Unfortunately, most weeds which infest turfgrass areas can tolerate close mowing heights. The idea is to select a mowing height and frequency based on growth rate and environmental conditions. As a general rule, remove no more than one-third of the leaf area with any mowing. Keep mowing equipment sharp and in good operating condition. Continuous mowing with a dull mower blade weakens turf, making it prone to stress injury and weed invasion. Proper mowing practices help develop and maintain a dense, vigorous turf less subject to weed competition.

Although more commonly used for disease control, sanitation practices can help control weeds. Sanitation refers to the physical removal or avoidance of placing undesirable plants where they are not wanted. Violets, often planted in flower beds, can become established in turfgrass where they are a troublesome pest. Avoid planting species such as violets close to the edge of flower beds where they can readily invade the turf.

Mowing and edging equipment should be kept clean. A mower may pick up a sprig of zoysiagrass from an adjacent turf and move it



to a section of bluegrass turf. If conditions are favorable. the zoysiagrass can become established in the bluegrass. continued on

page 28

**Curley dock** 

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Circle No. 112 on Reader Inquiry Card

#### COOL-SEASON from page 26

When establishing a turf stand, make sure to use nothing but the highest quality seed available. Low quality seed often contains weed seed. One way to ensure the seed you buy is high quality is to only buy certified seed, which indicates what percentage, if any, weed seed is present and guarantees the genetic purity of the seed bag.

**Chemical control**—Herbicides are an integral part of any weed control strategy. Herbicides provide an effective, convenient method of controlling weeds in turf, but should be considered as a supplement to proper cultural and mechanical control methods. For the most part, herbicides are specific as to which weeds they will control, and herbicide selection depends on which weeds are present.

Herbicide selection also depends on which turfgrass species are present. Always read and follow herbicide label directions. Double coverage at half rate in two directions assures a more even distribution than full rate applied in one direction. Do not apply granular formulations to wet turf.

The purpose of **pre-emergence** herbicides is to form a chemical barrier at the soil surface to control weeds during germination, before they emerge. **Post-emergence** herbicides are applied to target weeds that have already emerged from the soil. Post-emergence herbicides may be **selective** or **nonselective** and act as systemic or non-systemic (contact) types.

Systemic herbicides are absorbed and moved within the plant system. They are commonly used to control perennial weeds, since they are translocated to underground plant parts and eliminate regrowth from these structures. **Contact** herbicides kill only those plant parts which are sprayed and are not translocated within the plant. They are most effective on annual weeds. Uniform coverage is essential for effective weed control using a contact herbicide.

**Pre-emergence application tips**—Preemergence herbicides are used primarily to control annual grasses, but may control annual broadleaf weeds as well. For these products to be effective, they should be applied a few weeks prior to the germination of the weeds controlled. A second application is sometimes needed to provide season-long control.

• Prepare the site. Pre-emergence herbicides must reach the soil where weed seeds germinate. To maximize the amount of product which reaches the site, the turfgrass must be prepared properly. Rake and remove trash, thatch, leaves and excess dead grass from the turfgrass. This allows the soil surface to warm quickly in the spring and enhance turf growth.

• Mow the grass. It is helpful to mow the turfgrass prior to herbicide application to reduce herbicide interception. Research conducted at the University of Nebraska has shown that up to 95 percent of applied preemergence herbicide can be retained on the turfgrass leaves and never reach the soil. By mowing prior to the treatment, less material is intercepted by the turf and more gets to the soil surface.

• Irrigate. It is critical to water pre-emergence herbicides into the turfgrass as soon as possible. Usually, between one-half to one inch of water is sufficient for many of the preemergence herbicides to be moved into the soil and activated. Without irrigation or rainfall soon after application, the product stays on the turf and can be degraded by sunlight, which greatly reduces efficacy.

**Post-emergence application tips**— Regardless of the type of weed, there are several factors that influence the effectiveness of postemergence applications.

• Apply when weeds are small. For annual weeds, or the seedlings of perennials, control is easiest to achieve when the weeds are small. As the weeds age, changes in leaf surface characteristics, such as growth habit and physiological function occur. These changes result in reduced herbicide uptake and translocation. The larger the weed, the more difficult it is to control. Larger weeds may require higher rates or repeat applications, which can increase injury to existing turf.

• Apply to healthy weeds. Weeds are more susceptible to herbicides if they are actively growing at the time of the application. Any stress that reduces the vigor of the weed often results in less herbicide uptake and translocation, the end result being erratic control. Good soil moisture and moderate air temperatures should be present when making applications. If soil moisture is lacking, water the turfgrass a few days prior to the intended spray date. Applications made early in the morning or late in the afternoon are also helpful. At these times, air temperature is low and water stress is at a minimum.

• Avoid irrigation and rainfall. Postemergence herbicides must be retained on the leaf surface of the weed so the material can be absorbed and translocated within the weed. Although these herbicides have some soil activity, most of the weed control benefits are from foliar activity. If irrigation or rainfall occurs shortly after herbicide application, significant amounts of the herbicide can be washed off the weed, resulting in reduced control. Generally, there needs to be an eight-hour, rain-free period after an application has been made.

• **Do not pre-mow.** The target weeds must have enough leaf area to intercept a lethal dose of the herbicide. To ensure adequate leaf surface, don't mow the area prior to spraying for weeds.

Ideally, the area should not be mowed for two to three days before treatment. After treatment, allow another three to four days to pass before mowing the area. This allows enough time for the herbicide to be thoroughly translocated within the weed.

For more specific information, consult your local or state turfgrass specialist or other experts.

-Dr. McNamara is an extension weed scientist at the University of Nebraska.

#### Identify the problem

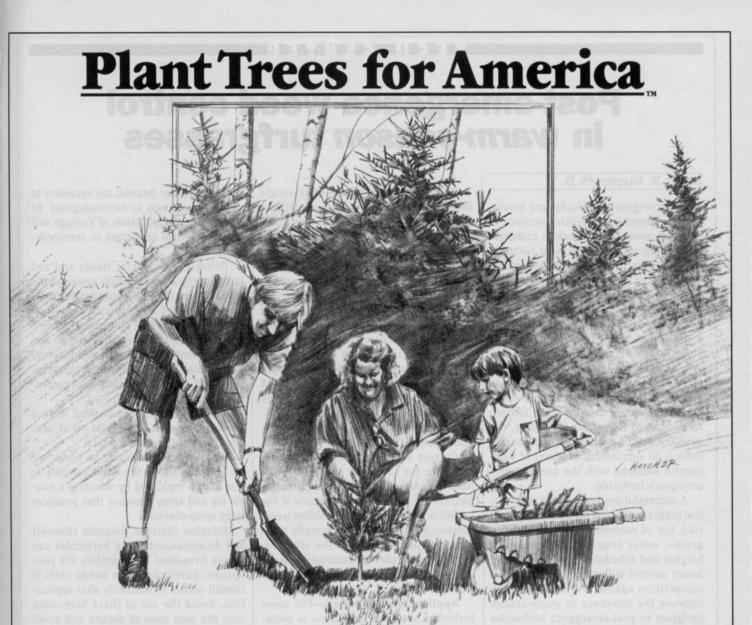
From a control standpoint, determining the lifecycle of the weeds—whether they are annuals, biennials or perennials is essential for management purposes.

Annuals require one year or less to complete their lifecycle. They germinate from seed, mature and produce seed for the next generation in less than 12 months. Winter annuals such as sheperdspurse and henbit are most visible in the spring after bolting (stalk elongation). After bolting has occurred, the chances of achieving satisfactory control by any form decreases. Summer annuals such as crabgrass and prostrate knotweed are most easily controlled in the early spring before they germinate, or when small and actively growing.

**Biennials** complete their lifecycle in two years. They form a rosette during the first year, maintain the rosette during the dormancy of the winter, then continue vegetative growth with flowering and seed development the following year. They are most easily controlled in the fall or early spring when the plants are still in the rosette stage. Members of the thistle family, such as musk and plumeless, are classic examples in turf.

**Perennials** are plants that live for more than two years, and may live indefinitely. Many perennials grow from seed, but may arise from reproductive structures such as tubers, roots, stolons and rhizomes. Dandelions, white clover, quackgrass and ground ivy are examples of perennial weeds. Best control is achieved by fall application of an appropriate herbicide.

-Dr. McNamara



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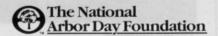
December in the fall. The six to twelve inch trees are guaranteed to grow, or they will be replaced free.



You will also receive The Tree Book with information about tree planting and care.

To become a member of the Foundation and receive your free trees, send a \$10 contribution to Ten Blue Spruces, National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410.

Join today, and plant your Trees for America!



#### 

#### **Post-emergence weed control** in warm-season turfgrasses

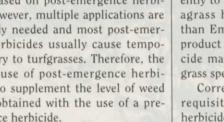
#### by Tim R. Murphy, Ph.D.

Pre-emergence herbicides are invaluable for providing effective control of common annual weeds such as crabgrass and goosegrass. However, most turfgrass sites are infested with weeds that are not controlled by pre-emergence herbicides.

Fortunately, warm-season turfgrass managers have a wide array of posteergence herbicides which can be used to control these problem weeds. A complete chemical weed control program can usually be based on post-emergence herbicides. However, multiple applications are commonly needed and most post-emergence herbicides usually cause temporary injury to turfgrasses. Therefore, the primary use of post-emergence herbicides is to supplement the level of weed control obtained with the use of a preemergence herbicide.

A successful post-emergence wed control program depends on well-maintained turf. Use of recommended fertility programs, water requirements, mowing heights and schedules, and disease and insect control will greatly increase turf competition against weeds. It will also improve the tolerance of warm-season turfgrass to post-emergence herbicides and increase the effectiveness of the postemergence weed control program.

Numerous herbicides are available to control emerged weeds in warm-season turfgrasses (Table 1). However, several factors must be considered in selecting the appropriate herbicide.



Turfgrass tolerance-The single most important factor in selecting a post-emergence herbicide is the tolerance of the turfgrass to the herbicide.

Warm-season turfgrass species differ in their tolerance to post-emergence herbicides. For example, bermudagrass has good tolerance to MSMA and DSMA. However, carpetgrass, centipedegrass and St. Augustinegrass are severely injured by these herbicides. Additionally, cultivars within a species may respond differently to the same herbicide. Meyer zoysiagrass has better tolerance to MSMA than Emerald or Matrella. Refer to the product label to determine if the herbicide may be used on a particular turfgrass species.

Correct weed identification is a prerequisite for selecting an appropriate herbicide. After the weed has been identified, review the label to determine if the herbicide will control the problem weed. Reference to land grant university weed control guides may show the effectiveness of herbicides in controlling weed species that are not listed on the herbicide label.

Application frequency—For some herbicides, a repeat application is necessary to effectively control the weed. For example, two applications of MSMA, at a



seven- to 10-day interval, are necessary to control crabgrass in bermudagrass. In contrast, one application of Vantage will usually control crabgrass in centipedegrass.

Other than athletic fields and sod farms, turfgrasses are rarely grown as the sole plant in the landscape. Ornamentals may be injured by herbicide spray and vapor drift or by root absorption of some herbicides. Ester formulations of the phenoxy herbicides (2.4-D, dichlorprop) easily volatilize during warm temperatures and can injure sensitive ornamentals by vapor drift.

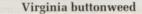
Their use should be avoided during the warm months of the year on or near sites that contain ornamentals.

Spray drift damage can be prevented by spraving when the wind velocity is less than 5 mph, and by selecting a nozzle tip and spray pressure that produces large spray droplets.

Atrazine (Aatrex), dicamba (Banvel) and dicamba-containing herbicides can injure broadleaf ornamentals via root uptake, particularly on sandy soils if rainfall occurs immediately after application. Avoid the use of these herbicides over the root zone of shrubs and small trees.

-Dr. Murphy is an extension agronomist in weed scientist at the University of Georgia.







**Purple nutsedge** 

Wild garlic

Table 1. Names of warm-season turigrass post-emergence herobicides



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#### 

#### Table 1. Names of warm-season turfgrass post-emergence hercbicides1

Common name	Trade name(s)	Uses
asulam	Aulox	grass weed control in St. Augustinegrass
atrazube	Aatrex, others	pre- and post-broadleaf and grass weed control
bentazon	Basagran T/O	primarily used for yellow nutsedge control
bentazon + atrazine	Prompt	yellow nutsedge and broadleaf weed cor trol incentipedegrass, St. Augustine grass and zoysiagrass
bromoxynil	Buctril	broadleaf weed control
2,4-D	numerous formulations	broadleaf weed control
2,4-D + dicamba	Eight-One	broadleaf weed control
2,4-D + dichlorprop	Weedone DPC Amine Weedone DPC Ester	broadleaf weed control
2,4-D + mecoprop	Lescopar; 2 Plus 2	broadleaf weed control
2,4-D + mecoprop + dicamba	Trimec Classic; Trimec 992; Three-Way	broadleaf weed control
2,4-D + mecoprop + dichlorprop	Weedestroy Triamine; Weedestroy Tri-Ester	broadleaf weed control
dicamba	Banvel	broadleaf weed control
diclofop-methyl2	lloxan	goosegrass control in golf course bermudagrass
diquat	Reward	winter annual weed control in dormant bermuda grass
DSMA	numerous formulations	grass weed control in bermudagrass and zoysiagrass
ehofumesate	Prograss	pre- and early post- <i>poa annua</i> (annual bluegrass) control in overseeded bermudagrass. Common bermuda grass suppression in St. Augustine grass
fenoxaprop	Acclaim	annual grass weed control and suppres sion of bermnudagrass in zoysiagras
glyphosate	Roundup	winter annual weed control in dormant bermudagrass and bahiagrass
haalosulfuron	Manage	controls yellow and purple nutsedge
imazaquin	Image	nutsedge and wild garlic control in warm season turfgrasses (except bahia grass). Also controls certain annual broadleaf weeds.
mecoprop	Mecomex; Lescopex	broadleaf weed control
mecoprop + 2,4-D + dicamba	Southern Trimec Trimec Bent	broadleaf weed control
MCPA + mecoprop + dicamba	Trimec Encore, Encore DSC	broadleaf weed control
MCPA + mecoprop + dichlorprop	Weedestroy Triamine II, Weedestroy Tri-Ester II	broadleaf weed control
metribuzin	Sencor Turf	goosegrass control in bermudagrass. Also controls prostrate spurge, winte annual broadleaf weeds.
MSMA	numerous formulations	grass weed control in bermudagrass an zoysiagrass
MSMA + 2,4-D + mecoprop + dicamba	Trimec Plus	grass and broadleaf weed control in bermudagrass and zoysiagrass
pronamide	Kerb T/O	annual bluegrass control in bermuda grass
sethoxydim	Vantage	annual grass control and suppression of bahiagrass in centipedegrass
triclopyr + clopyralid	Confront	broadleaf weed control in bermudagrass centipedegrass & zoysiagrass

1 Refer to the herbicide label for a complete listing of tolerant turfgrasses and labeled application sites.

2 Diclofop-methyl has a state label for use in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Texas.

## **2<sup>nd</sup> Generation**

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Myo-Inositol	0.5%
Glycine	1.09

**2nd GENERATION FORMULATION** 

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#### **Post-emergence use suggestions**

• Apply post-emergence herbicides to small, actively-growing weeds. Perennial and annual weeds that are growing under good soil moisture conditions at moderate air temperatures are easier to control than weeds that are stressed due to adverse environmental conditions.

• Target the application to coincide with good soil moisture conditions at air temperatures of 60-90° F. Applications on cold, wintery days, or to drought-stressed weeds will result in poor weed control.

 Post-emergence herbicide use should be avoided when turfgrasses and weeds are stressed due to high air temperatures or drought.

The tolerance of warm-season turfgrasses to post-emergence herbicides decreases at air temperatures greater than 90° F when turfgrasses are drought-stressed or when they are growing under high soil moisture and high relative humidity conditions.

• Herbicides that contain 2,4-D, dicamba, mecoprop, dichlorprop, imazaquin, MSMA and DSMA should not be applied at high air temperatures (greater than 90° F), since there is an increased risk of unacceptable turfgrass injury. Always follow the most restrictive warning on the label. additionally, the tolerance of warm-season turfgrasses to herbicides is generally lower during spring green-up than when the turfgrass is dormant or after full green-up. Fortunately, research has shown that the decrease in turfgrass quality that may result from the use of post-emergence herbicides during green-up is temporary and persists for 2 to 6 weeks after application. If a dense weed population requires a post-emergence herbicide during green-up, use only the lowest recommended or one-half the recommended rate to minimize herbicide injury to the turfgrass. If needed, the application can be repeated after full green-up.

 Single applications at high rates generally cause more turfgrass injury than repeat applications at low rates.

Additionally, single, high rate applications often do not control perennial weeds. The repeat application is usually made at intervals of seven to 14 days after the first application, or when regrowth of the weed is noted.

• Mowing schedules must be coordinated with post-emergence herbicide applications. Generally, mowing should be delayed three to four days before or after a post-emergence herbicide application to increase the leaf surface area of the weed and spray deposition. The delay after application is necessary to allow adequate time for herbicide absorption and translocation in the target weed species.

• Do not apply post-emergence herbicides immediately before rainfall or irrigation. Rainfall or irrigation immediately after application can wash the herbicide from the treated weed foliage and decrease control. On irrigated sites, watering drought-stressed weeds one to two days before a post-emergence herbicide application will usually improve control of the problem weeds species.

 Use surfactants and crop oil concentrates according to label directions.

• Calibrate all spray equipment and train the operator.

- Dr. Murphy

**Common bermudagrass.** Unless desired, common bermudagrass is an aggressive, competitive weed. Multiple applications of Vantage can suppress bermudagrass in centipedegrass. In zoysiagrass, repeat applications of Acclaim at three-week intervals during the summer months will suppress it.. Prograss can be used to suppress activelygrowing common bermudagrass in St. Augustinegrass.

**Bahiagrass.** Repeat applications of MSMA or DSMA at seven- to 10-day intervals will control bahiagrass in MSMA/DSMA-tolerant turfgrasses. In centipedegrass, repeat applications of Vantage at 10-1

**Dallisgrass.** A perennial, dallisgrass is hard to control. In bermudagrass or zoysiagrass, 2-4 repeat applications of MSMA or DSMA will be necessary. Also an non-ionic surfactant should be used with MSMA or DSMA to control dallisgrass. Applications should be made when dallisgrass is growing under good soil moisture conditions. Staying on the application schedule (2-4 applications, each at a 5- to 10-day interval) will be required to control dallisgrass.

## Problem weeds

**Nutsedge(s).** Basagran T/O will provide good control of yellow nutsedge, but not of purple nutsedge. Monthly applications of MSMA or DSMA in tolerant turfgrasses in the late spring and summer months can suppress the growth of both species. With the exception of bahiagrass and carpetgrass, Image can be used in warm-season turfgrasses for yellow and purple nutsedge control. MSMA to Image generally improves nutsedge control in MSMA-tolerant turfgrasses.

A repeat application, 6- to 8-weeks after the first, of Image or Image+MSMA is required to control nutsedge during the summer months. Manage (halosulfuron) is now registered for nutsedge control in warmseason turfgrasses. Manage provides good to excellent control of purple and yellow nutsedge. A repeat application 6- to 10-weeks after the first application may be needed for season-long control. Warm-season turfgrasses have excellent tolerance to Manage. Virginia Button weed. The most difficult to control broadleaf weed in southern turfgrasses. This warm-season perennial reproduces by seed, cut plant pieces, and fleshy roots. Research shows that repeat applications, at intervals of three to six weeks, of a two-way or three-way herbicide is needed in the summer to suppress Virginia buttonweed.

Research in Mississippi shows that 2,4-D undergoes more translocation to the roots of Virginia buttonweed than other broadleaf herbicides. Therefore, two-way or three-way herbicides with a high concentration of 2,4-D may provide better Virginia buttonweed control than products low in 2,4-D or products that do not contain,4-D.

Wild garlic. Fall (November) plus a winter (January-February) application of 2,4-D or two-way or three-way products that contain a phenoxy herbicide or dicamba over a two to three year period will control wild garlic. Early- to mid-winter applications of Image have also provided good to excellent control of emerged wild garlic.





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# HOT

# Chippers, shredders to lead equipment market growth

EPA restrictions and more golf maintenance will drive equipment sales.

by James E. Guyette Contributing Editor

**CLEVELAND**—An industry analyst predicts that you will be called upon to chip and shred more brush, adapt to using new models of electrically-powered equipment, and service more golf courses. Residential clients will be more plentiful, too.

Chippers and shredders are expected to be the highest growth category within the power equipment marketplace, according to a study here by The Freedonia Group.

An anticipated annual expansion rate of 16 percent through 1998 is largely based on increased environmental concerns among consumers and restrictions on yard waste being enforced by state and local governments, says analyst Kathleen O'Brien, who authored the 225-page study. It sells for \$2,800.

"Environmental regulations are also causing changes in manufacturing," she notes. "For instance, new EPA standards that will regulate the amount of air emissions are forcing manufacturers to redesign their products."

Expect electric tools to play a bigger role in the power equipment marketplace based on mandates from the EPA. O'Brien predicts that the total electric market will grow by close to 20 percent annually, and that it will account for 12 percent of all the U.S. lawn and garden equipment shipments by 1998.

She believes that advances in battery | land, OH 44122; phone (216) 921-6800

#### **U.S. DEMAND FOR POWER LAWN & GARDEN EQUIPMENT**

Item	1983	1993	1998	% annua	-
				83-93	93-98
Equipment shipments	2777	5458	6820	7.0	4.6
Residential	2510	4603	5710	6.3	4.4
Lawnmowers	1303	2528	3060	6.9	3.9
Other	1207	2075	2650	5.6	5.0
Commercial	267	855	1110	12.3	5.4
(figures in million	ns of dolla	rs)			
I and Management			Source: The	Freedonia	Group, Inc

technology along with more stringent emissions standards will result in greater use of electric motors in larger pieces of equipment such as lawn mowers.

The demand for outdoor power equipment in general is expected to grow at 4 percent annually through 1998, with the market reaching \$5.8 billion at manufacturers' prices. Commercial gear sales may see a 6 percent yearly increase based on the construction of more new golf courses, a strong replacement demand from municipalities and a rise in dual-income households that will create a bigger demand for professional landscaping services.

Exports are another equipment issue as manufacturers cope with a largely mature U.S. marketplace. "The commercial export market will be especially strong due to the fact that most other nations do not have established commercial lawn and garden equipment-producing firms," O'Brien forecasts, adding that "the explosive popularity of golf in certain areas creates an instant need for a wide variety of commercial maintenance equipment."

Contact: The Freedonia Group, 3570 Warrensville Center Rd., Suite 201, Cleveland, OH 44122; phone (216) 921-6800

**ELSEWHERE** 

#### Power blower ban is unconstitutional in New York village

**SCARSDALE, N.Y.**—Scarsdale Village Justice Virginia Knaplund found the June, 1993 seasonal ban on gasolinepowered leaf blowers unconstitutional last month.

The ban was contested by Trolio Landscaping of Mount Vernon, which was represented in court by Thomas Beirne of Cuddy & Feder of nearby White Plains.

Scarsdale is a community just north of Yonkers, very near New York City and within six miles of both Connecticut and New Jersey.

The decision found the Village of Scarsdale regulation "arbitrary, irrational and unduly oppressive." The statute must be found unconstitutional, wrote Judge Knaplund, "if an ordinance is unduly oppressive and a valid government objective can be accomplished by less restrictive means," according to an

continued on next page

Early thaw could hurt foliage, page 37 No smugness in Washington, page 38

Hort info now on CD-ROM, page 38

This month's slate of meetings, page 39

#### BAN from preceding page

article in the Scarsdale *Inquirer*. The newspaper quoted the judge:

"When you're depriving someone of his livelihood, you have to do it by the least restrictive means, and if there are regulations that would do it, then you have to do it that way."

Michael Bellantoni of the New York State Green Industry Association was pleased with the outcome.

"This was an important decision for our industry," he noted, "and a recognition of the view of the silent majority of our customers who appreciate the tools of our trade.

"This, of course, does not relieve us from using prudence in the use of leaf blowers, in a way that minimizes inconvenience or disturbance to surrounding neighbors. This decision will (also) require us to contest other leaf blower bans."

Such laws remain in effect in Pelham, New Rochelle, Atlantic Beach and Larchmont, N.Y., and certain other communities in California and Michigan.

# January thaw may lead to fewer spring flowers in northern states

**UNIVERSITY PARK, Pa.**—You may have noticed flowering bulbs sending up shoots, and buds opening on shrubs and trees during January's warm spell. This may be bad news for some spring flowers, says J. Robert Nuss, professor of ornamental horticulture at Penn State.

HOT TOPICS

"Warm weather, thawed soil and plenty of moisture can cause woody ornamentals and many spring flowering bulbs to break dormancy and begin growing," says Nuss. "With temperatures of 60°F and higher in January, the flower buds on many trees and shrubs have expanded and have even begun to show color.

"These buds are likely to be killed during the freezing weather that followed (in February and early March)," Nuss adds. Shrubs that flower early are most likely to suffer from bud damage: forsythia, flowering quince, jasmine, weigela, lilac, witch hazel and some kinds of viburnum and rhododendron.

"The extent of injury will depend on

the amount of available moisture, how much the buds have opened, and how cold it gets during the remainder of winter," Nuss says. "Plants at higher elevations and in colder areas probably have remained dormant and won't be injured."

There is nothing that landscape managers can do about the problem.

However, foliage on spring bulbs sending up premature shoots probably will not be injured much, Nuss notes.

He cautions that premature foliage will need some protection against nibbling rabbits. "A thin layer of straw or mulch over the leaves will conceal them," he says. "This also helps keep the shoots from being crushed by ice and snow."

If flowers are lost, take heart—it doesn't mean the plant will die. "Most trees and shrubs are quite durable and can survive temperature fluctuations," Nuss concludes. "In any case, those buds that survive will be all the more welcome this spring."



Circle No. 110 on Reader Inquiry Card

## No time for smugness in Washington

**ORLANDO, Fla.**—Don't get too smug about the recent silence of lawn care critics, particularly in Washington D.C., warns LCO Robert Andrews.

"Historically, when do we get into trouble? When we're not under the gun," says Andrews.

Andrews, the 1993 president of the Professional Lawn Care Association of America (PLCAA), says the Republican landslide this past November heartened many LCOs, but political fortunes can change rapidly. "Two years ago (President) Clinton was on top of the world. He's down now, but don't count him out.

"If we start to mess up. If we let our guard down. If we get sloppy, the wolf will be back at the door."

Also, points out Andrews, agriculture's clout in Washington D.C. will likely con-

tinue declining. An example is the broadsides being aimed at farm subsidies.

HOT TOPICS

"That big umbrella that agriculture protects us with, to a great extent, is declining," says Andrews who owns a lawn care company near Indianapolis. He made these comments at a seminar he conducted here in January on behalf of PLCAA.

-Ron Hall

### Massachusetts gets pre-emption

**SPRINGFIELD, MASS.**—At the end of the 1994 legislative year Governor William Weld signed into law preemption legislation in Massachusetts. This law gives the state exclusive authority to regulate pesticies. It goes into effect at the end of March.

The Massachusetts Association of Lawn Care Professionals along with the Associated Landscape Contractors of Mass., the Mass. Arborists Association, and the New England Pest Control Association worked for the last three years to insure passage of this bill.

## Landscape managers told to educate the public

**TWIN FALLS, Ida.**—Members of the Environmental Care Association were told by Doug Fender that they must become more proactive by sharing scientificallybased facts about the benefits of turfgrass with the public.

Fender, executive director of Turfgrass Producers International, made his comments during the organization's annual meeting here earlier this year.

He said everyone in the turfgrass industry must counter the pseudo-scientific attacks by people he termed "eco-terrorists" during his hour-long presentation.

"What does a rain forest do that a lawn doesn't also do?" Fender asked rhetorically. "Both lawns and rain forests are made up of thousands or millions of plants. The average lawn...is a forest of grass. Who knows: maybe like the hope we hold for the rain forests, the cure for many diseases may be waiting to be discovered, right under our feet."

## **INFO** CENTER

#### Books, literature and videos for the green industry

**NOW ON CD-ROM...**A computer CD-ROM disk is now available from Colorado State University's Cooperative Extension Service for horticulturists. It features a collection of CSU's latest research on lawn care, selection and care of trees and shrubs, and flower and perennial growing.

It also contains the following CSU publications: "Woody Landscape Plants for the High Plains," "Flowering Herbaceous Perennials for the High Plains," "Insects that Feed on Colorado Trees," and "Shrubs and Household Insects of the Rocky Mountain States."

The disk contains more than 5,000 fact sheets and 2,000 graphics. It is available in Windows, DOS, Mac and Unix versions. Send \$40 to Resource Center, 115 General Services Bldg., CSU, Fort Collins, CO 80523 or phone (303) 491-6198.

WEEDS & DISEASES..."Biological Control of Weeds and Plant Diseases" by Elroy L. Rice, professor emeritus of botany, is available from the University of Oklahoma. The 448-page text contains information useful to plant pathologists, agronomists, foresters and horticulturists. To order, send \$55 to the University of Oklahoma Press, P.O. Box 787, Norman, OK 73070 or call (800) 627-7377. Stipulate publication #2698-1.

**PRECIPITATION RATES...**A new irrigation training program entitled "Precipitation Rates and Sprinkler Irrigation," from Hunter Industries, is for educators, distributors, contractors and irrigation designers. It includes an instructor's manual, student manuals, 75 slides and a quick-calc slide rule. Cost is \$45; additional student manuals are \$1.50 each. To order, call (619) 744-5240.

**TREE TRIMMING MANUAL...**ACRT Institute is selling "The Line Clearance Tree Trimmer Certification Manual" for \$120. Using it for training will fulfill OSHA's special training requirement that went into effect Jan. 31. The manual has more than 200 illustrations. To order, or for more information, call ACRT at (800) 622-2562 or write ACRT, P.O. Box 219, Kent, OH 44240. **ENVIRONMENTAL GOLF...**"An Environmental Approach to Golf Course Development" is available from the American Society of Golf Course Architects. The 48-page brochure, which includes a foreward by the U.S. EPA, shows how golf courses can complement the environment, and includes case studies and specific checklists for reference during the process of applying for the appropriate permits. Copies are available for \$10 each from: ASGCA, 221 N. LaSalle St., Chicago, IL 60601.

**STREET TREES...**A 188-page full color book titled "Street Trees Recom-mended for Southern California" is available from Street Tree Seminar, Inc. The book contains more than 350 photographs of 85 different trees. The text is designed for serious students, professional tree managers and casual reference. For more information, write to Chairman, Publica-tions Committee, Street Tree Seminar, P.O. Box 3222, Anaheim, CA 92803; or phone (714) 991-1900.

## SUPPLIER'S CORNER

HOT TOPICS

• Tadd Seitz relinquishes his CEO position to Theodore Host, who had been COO at The Scotts Co. Seitz will continue to be actively involved with the company as chairman of the Board of Directors...

American Cyanamid expands its Turf, Ornamental and Pest Control Products Group with the promotion of Brian Stidham to national sales manager and Lendel Schutzman to key accounts manager. Other changes: Gary Curl to senior market manager, Kyle Miller to senior market development manager and Dr. John Thomas to product development manager...

• Up to \$1,000 will be awarded to each of 23 U.S. universities by AgrEvo USA as part of its Turf Scholarship Program. Scholarships are being awarded through this month...

Richard E. DeVaughn is new vice president, engineering at Jacobsen Division of Textron...

Bill Scheele is new to the Encore Manufacturing engineering department...

Robert F. Killian Jr. is new senior vice president of sales and marketing at Kubota Tractor Corp....

New at Lofts Seed: Dr. Richard Hurley promoted to vice president, director of research and professional sales; Vickie Wallace to technical service coordinator, John Brader to manager of the Maryland facility. Mary Beth Ruh is new manager of the new Allentown warehousing/shipping branch...

• The Toro Co. forms a new Recycling Equipment Division to manufacture and market equipment for the growing global recycling equipment industry. Mike Hoffman is managing director...

• Lofts Seed awards scholarships of \$1000 and \$2000 to 14 students in the name of co-founder Peter Selmer Loft, the 11th straight year such presentations have been made...

• Jerry Curtice, long of Aquatrols, retires. Taking his place is Jim Turner, previously southeast territory manager...

Donald Dungjen is appointed nation-

al market manager for Buckner Irrigation's residential and commercial products division...

Zeneca Professional Products names
 Ernie Mahlmann technical sales lead...

• Operating profits reached £14.4 million in nine months to September 1994 for Ransomes plc of Ipswich, England, parent company of Ransomes America Corp. That compares to £2.4 million for 12 months in 1993, which includes exceptional costs of £5.8 million...

Guy Mikel is promoted to vice president of the Specialty Business Unit at Sandoz Agro. Also, Terri Lohmann becomes marketing services associate...

Hunter Industries has seven new regional sales and service reps: Jeffrey Bower (Fla.), Steve Emerson (no. Calif., no. Nev.), John George (no. Texas, Okla., no. N.M.), Mark McKernan (cent. Calif., so. Nev.), Bruce Morgan (central plains), Don Neely (so. Texas) and Todd Van Dyne (N. Eng., east Canada).



# EVENTS

#### APRIL

**22-29:** American Society of Golf Course Architects annual meeting, Scotland. Phone: ASGCA, (312) 372-7090.

**25-26:** Sports Turf Management for Professionals course, Davis, Calif. Phone: University of California, (800) 752-0881 or (916) 757-8777.

**25-27: International Erosion Control Association seminars,** Nashville, Tenn. Phone: IECA, (800) 455-4322.

27: Southern California Sports Turf Managers Association Landscape and Lawn Seminar, Sea World, San Diego. Phone: Chris Bunnel, (619) 432-2421.

**28:** Certified Landscape Professional exam, sponsored by Associated Landscape Contractors of America, Cal Poly San Luis Obispo. Phone: ALCA, (703) 620-6363.

**29: Certified Landscape Professional exam**, sponsored by Associated Landscape Contractors of America, Sandhills Community College, Pinehurst, N.C. Phone: ALCA, (703) 620-6363.

#### Correction

In the January 1995 issue LM mistakenly reported that Providence creeping benting had been developed at the Univ. of Arizona. The developer, in fact, was the Univ. of Rhode Island.

Circle No. 127 on Reader Inquiry Card

Landscape Management, March 1995 39



#### Texture and color combine to brighten water park surroundings.

#### by James E. Guyette

• There's nothing fishy about the selection of plant materials at Sea World of Aurora, Ohio. The aquarium-oriented theme park avoids missing the boat by following through with *themes* when choosing the flowering fauna that adorns the grounds.

"Not a marigold or tree goes in unless it's part of a theme," says Rob McCartney, Sea World horticulturist. "We theme everything—and at Sea World we use aquatic colors."

Blues and greens are commonplace, and plants are carefully picked to carry forward a certain aspect or illusion that coincides with the area to be decorated. One striking example is a flowerbed outside a shark tank that bears a striking resemblance to an undersea scene—yet it's done entirely with above-ground plantings.

"We've done a lot of things with color, and now we're doing things with texture," McCartney explains. In addition to items like the afore-mentioned aquarium area, efforts are made to reel in the patrons tactilely.

"We're focusing more and more on touch. People love to touch things," says McCartney. "We've positioned our baskets (of flowers) so people can touch them."

Patrons who want a flower in their hair or one for the baby's stroller won't be forced to walk the plank for borrowing one from the many color spots at Sea World.

"If you want to pick flowers—fine. But we don't have problems with people destroying our park like other (amusement) parks have," McCartney notes (the clientele has a healthy helping of grandparents and small children to help put a damper on hooliganism). "One reason is that we don't have many 15- to 17-yearolds is because we don't have rides."

**Bubbling with enthusiasm**—The texture technique is applied throughout the entire park as people are enticed to become a part of the actual decor. Roped-off regions and barricaded byways are kept to a minimum. Large rocks are placed so that they make an inviting spot to rest.

"We have people sitting on boulders when there's a bench right there—and then they become part of the landscape."

Catering to creature comforts is a Sea World strategy that can applied by landscape managers at other public enterprises. "Find out what people want," McCartney advises. "Taking a survey is something you can do."



At the entrance to the Shark Encounter exhibit, a bull shark done in topiary 'swims' between boulders over a bed of plume ferns.

"If people want shade—give it to them." So many amusement parks seem to be intent on punishing people with acres and acres of concrete, boiling under a hot sun, yet most folks are quite content with "simple things like shade and a place to sit on the grass."

Sea World is user-friendly in that a man taking his family on an outing to look at fancy fish—when in reality he'd rather be sitting down to dinner to eat one—can find enjoyment by taking in the natural beauty supplied by McCartney and his staff. Hanging planters are recommended for areas that might not lend themselves to conventional flower beds.

"A little touch of color in an area where you don't expect it is good," says McCartney, who spoke at the Northeast Ohio Green Industry Educational and Winter Trade Show. Proper planning can add a lot to such seemingly mundane installations. "Around a lemonade stand, use lemon-colored marigolds."

Plants are adjusted to match climate conditions and ensure a suitable display. "People spend more than \$20 to come to Sea World in May and to come to Sea World in August, but the people in May also deserve to see (an acceptable floral show); we can't tell them it's too early in the year," says McCartney.

A species that is prone to disease or pest problems is given the deep-six. "We don't bother with fungicides and all that. If it looks bad, we rip it out," McCartney explains.

The park's floral foundation is enhanced by getting all the other employees involved when the big spring sowing session is planned. "We plant all of them in 15 days' time," McCartney reports. "We get accountants and everyone's mother" to help with the landscaping.

-The author is a resident of South Euclid, Ohio, where he writes on a freelance basis for landscape and other trade magazines. INTERNATIONAL LAWN, GARDEN & POWER EQUIPMENT EXP095

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# GREEN INDUSTRY SHOWCASE

#### New herbicides released in time for new season

Terra International has added three new products to its line of professional control products.

Strike 3 herbicide controls a variety of weeds: chicory; chickweed; clover; dandelion; ground ivy; henbit; lambsquarters; morning glory; pigweed; poison ivy; poison oak; ragweed; and spurge, in ornamental lawns and turf.

Riverside 912 MSMA herbicide is also new to the Terra line. The 912 MSMA is a combination of herbicide and surfactants. used to control bahiagrass, barnyardgrass, chickweed, crabgrass, dallisgrass, goosegrass, nutsedge, sandbur and wood sorrel in lawn and ornamental turf with little or no mowings.

Riverside SEE 2.4-D LV4 is a low-odor formulation for broadleaf weed control in turf and ornamentals. It is used on established stands of perennial grasses, depending on the type of weeds and stage of growth. Use up to two applications of SEE per year to control bindweed, chickweed, cocklebur, dandelion, ground ivy, lamb-



#### **Attach MSDS info sheets to** portable spray equipment

H.D. Hudson Manufacturing Company has a new Info-Pak for holding MSDS sheets, chemical labels, sprayer instructions or parts.

Circle No. 194 on Reader Inquiry Card

squarters, morning glory, mustard, pigweed, plantain, puncturevine, Russian thistle and wild lettuce.

All of these products are available in 2.5 gallon jugs. Strike 3 is also available in 55gallon drums.

Circle No. 191 on Reader Ingury Card

#### Broadleaf herbicide for sod farms, industrial turf sites

Trimec S.I. broadleaf herbicide has been marketed by PBI/Gordon.

Trimec S.I. contains 2.4-D. MCPP and dicamba and is designed for use on sod farms and industrial turf sites. The label includes worker protection provisions required by the Environmental Protection Agency to permit its use by sod producers.

Trimec S.I. is labeled for use on both warm- and cool-season grasses, and the company reports the product has a high degree of turfgrass tolerance.

The label allows application over wide ranges of temperatures and sprav volumes.

Trimec S.I. controls both annual and perennial broadleaf weeds and can be tank mixed with fertilizers and other pesticides. Circle No. 192 on Reader inquiry Card

#### **Trailer loaded with features** for easy equipment hauling

The V-Track trailer from Haulmark. Industries, Inc. comes with a V-shaped nose section to reduce wind resistance.

The 74-inch interior height and 96inch width provides plenty of room to allow for wide deck mowers, small tools and other accessories.

Three models are available in lengths from 14 feet to 24 feet, with ramp doors at both ends for easy loading and unloading.

The standard features include a springassisted rear ramp door with extension for easy loading, lightweight flip-up front ramp for unloading, rear stabilizer jacks, lined interior walls, T-bar tie-downs, and torsion-ride electric brake axles with easylube hubs, a steel tube frame, undercoated chassis, smooth aluminum exterior in a choice of eight colors and white spoke wheels

Haulmark Industries makes a wide line of steel frame, enclosed trailers in various sizes and payload capacities to meet many different needs.

Circle No. 193 on Reader Inquiry Card

## 55-gallon sprayer for many uses

The Turf Choice 55-gallon sprayer provides for easy, effective application of fertilizers, herbicides and insecticides to grass, trees, shrubs and hard-to-reach ornamentals.

The sprayer can be used with garden tractors or all-terrain vehicles.

The pump delivers 3.5 GPM and up to 50 PSI. Other features include a 15-foot spray coverage breakaway, folding boom and 25-foot gun hose for hard-to-reach applications.



# **PRODUCT REVIEW**

#### Trencher has larger gears, O-ring cover seals

The 1220 is a new 12.5 hp pedestrian trencher from Ditch Witch.

Designed to be the most advanced, reliable, and productive trencher in its class, the 1220's increased horsepower is delivered through one of two overhead valve engine options: the Honda GX390 or Kohler Command CH12.5

Circle No. 196 on Reader Inquiry Card

d for sod busting, ing and planting, mitter chorte such ce and pre-spring

ible combination eights and handle ble handles, er Inquiry Card



#### Backpack pruner powerful, durable, lightweight

A lightweight hydraulic pole pruning saw that features a powerful engine mounted on a comfortable backpack harness will soon be available from Husqvarna Forest and Garden Co.

The Husqvarna 235P is designed for orchards, tree services, utility companies and municipal workers. The 16.5-lb. saw combines power and convenience that makes it ideal for pruning and trimming in the forest, orchard, vineyard or around

## Mower features control to vary fineness of mulch

Yazoo Manufacturing Company introduces the Vari-Mulch Model S22CB4, a new rotary mower that features the Vari-Mulch selector.

The Vari-Mulch feature lets the user adapt the mower to accommodate various mowing conditions.

According to the company, the Vari-Mulch is the only mowing system of its kind on the market today. homes.

The 235P is designed to be comfortable to use. The telescopic shaft extends from 6 to 12 feet, and is made of lightweight fiberglass and reinforced polyester for easy handling.

A patented valve mounted on the oil tank controls the flow of oil through the unit, which removes weight from the shaft, increasing maneuverablity.

The engine is mounted on a wellpadded backpack and fitted with steel springs.

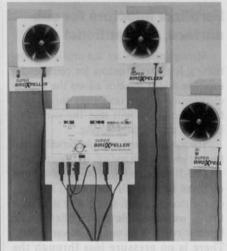
#### Circle No. 197 on Reader Inquiry Card

While using the Vari-Mulch, the operator can vary the rate at which the clippings are returned to the lawn, which controls the fineness of the mulch.

Under normal mowing conditions, the High-Wheel mower makes a smooth cut with finely chopped mulch. In heavy, wet grass, the Vari-Mulch selector is moved to the heavy grass position, which allows easy mowing and mulching without power loss.

The mower also has simultaneous fourwheel height adjustment and a positive traction differential system.

Circle No. 198 on Reader Inquiry Card



#### Repel unwanted birds with aural, visual deterrents

The Bird-X company markets a full line of bird control products which rely on ultrasonic sound.

The company has ultrasonic and sonic devices, visual deterrents, non-toxic chemical roost inhibitors, and physical barriers and exclusions.

All products arrive at your door readyto-use and complete with instructions.

These are perfect for government, school, industrial and commercial facilities; agriculture and aquaculture; marinas; airports; rooftops and eaves; arenas parks and any other infested areas.

Circle No. 199 on Reader Inquiry Card

#### Watering system aides short term turf establishment

Temporary Rain is an above-ground watering system to help establish new lawns and generate revenue by renting the unit to customers.

The Temporary Rain system for irrigation incorporates durable, pressure-tested, commercial-grade components, six-zone timer unit, manifolds, control cables and spike sprinklers in one managable design.

Developed by a landscaper, the system is designed to meet all the watering needs a client may have.

The company reports that the Temporary Rrain system reduces callbacks and complaints, is safe, portable, flexible and simple to install.

Circle No. 200 on Reader Inquiry Card

# PRODUCT

#### Fertilizer injectors for subsurface, conventional use

Strong Injectors are automatic proportioning fertilizer injectors for commercial use. The Add-It injector allows the user to distribute fertilizer uniformly throughout the systems, and will save the user both time and money, says Strong.

The injectors are of particular benefit to contractors who use drip and sub-surface irrigation.

Add-It fertilizer injectors have been designed for use with any liquid fertilizer on the market today, and can be used with totally water-soluble dry fertilizers. The injector requires no outside power source. There is no pressure loss through the injector, and there are no moving parts to wear out.

The injector is available in many sizes for a variety of irrigation requirements.

The Strong company is now headquartered in Rancho Cordova, Calif.

Circle No. 201 on Reader Inquiry Card

### These tools corrosion-resistant

V & B Manufacturing now provides more tool options plus year-round capability for contractors and landscapers with its recently expanded line of Groundbreakers landscaping tools.

The line now includes 13 different tool configurations each with combination tool heads. All tools

feature corrosion-resistant ductile iron tool heads and seasoned hickory handles. In addition to its hefty, full-size 36-inch Groundbreakers, the company also offers its lighterweight Handy Mattock series with both long (36-inch) and short (26inch) handles, plus a new, 16-inch Mini-Tiller for one-handed work.

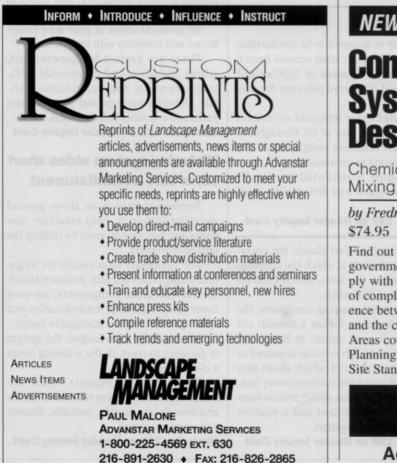
According to the company, these tools

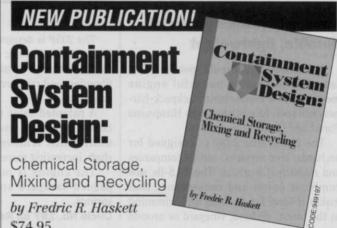


were originally designed for sod busting, digging, clearing, weeding and planting, but are being used for winter chores such as clearing snow and ice and pre-spring clean-up.

The tools have reversible combination tool heads, a choice of weights and handle lengths and interchangeable handles.

Circle No. 202 on Reader Inquiry Card





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Connecticut firm seeks working foreman with good experience in all phases of landscape construction and irrigation installation. A good knowledge of plants a must. Fax or mail resume to: BOMBACI LANDSCAPE, 45 Plains Rd., Essex, Ct. 06426, 203-767-8548. 4/95

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LANDSCAPE SALES MANAGER Menne Nursery has a unique opportunity for an experienced individual to develop and run our residential and commercial landscape division. Other duties would include hiring, training, designing and selling. Must have management as well as landscape design/sales experience. The position is full time and offers exceptional compensation and benefits with an industry leader in the Buffalo area celebrating 56 years of uncompromising customer service. Send resume to: Menne Nursery Corporation, 3100 Niagara Falls Blvd., Amherst, NY 14228, ATT: Gary Sokolowski. 3/95

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21134 Lorain Road, Fairview Park, OH 44126 or call for interview 216-331-1260. Ask for Dan.

#### **BUSINESS WANTED**

Are you interested in selling your small to medium sized Lawn Care company? We can probably help!! We are currently searching for lawn spraying companies throughout the United States and Canada. If you wish to discuss this possibility further please contact: John Kloosterhuis, 476 Evans Avenue, Etobicoke, Ontario Canada M9W 2T7, Phone: (416)253-6540 or Fax: (416)253-6891. 5/95

#### EDUCATIONAL OPPORTUNITIES

NOW...LEARN PROFESSIONAL LANDSCAPING AND GARDENING AT HOME! Accredited Program provides thorough training in all phases of commercial and residential landscaping. Diploma awarded. Free brochure describes program and opportunities in detail. Call 1-800-326-9221 or write Lifetime Career Schools, Dept: LF0115, 101 Harrison Street, Archbald, PA 18403. 12/95

Advertising Pays!

## LANDSCAPE MANAGEMENT

# MARKET SHOWCASE & CLASSIFED ADVERTISING

For all ads under \$250, payment must be received by the classified closing date. We accept VISA, MASTERCARD & AMERI-CAN EXPRESS. Credit card orders are accepted by phone.

ISSUES	CLOSING DATES
May	4-11
June	5-9
July	6-9
August	7-11
September	8-9
October	9-11
November	10-10
December	11-10

(Call rep for date confirmation.)

#### SEND AD COPY WITH PREPAYMENT TO:

Stephanie Stiggers-Smith Landscape Management 7500 Old Oak Blvd. Cleveland, OH 44310

for more information, call Stephanie:

1-800-225-4569 or 216-891-2719

Fax: 216-826-2865

Classified Advertising in LANDSCAPE MANAGEMENT is • EASY • EFFECTIVE and • ECONOMICAL

Reserve Ad Space in The Next Issue by calling Stephanie Stiggers-Smith: 216-891-2670

#### FOR SALE

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

FREE Catalog-Commercial Mower Parts. Walkbehinds-Riders. America's Largest Manufacturer and Distributor of Better Built Line of Parts and Equipment. Huge 130 Page Catalog-Call Today-Preco Distributors, 1-800-428-8004-USA, 1-800-421-3900-MA. Call 24 hrs. 3/95

#### **BUSINESS FOR SALE**

Very profitable, complete landscape business including greenhouses, nursery stock, sprinkler systems and sod farm in upper Northwestern North Dakota. 42 years in business, retiring and ill health. Contact Handy Andy's Nursery, Highway 2 & 85 West, Williston, North Dakota 58801. Phone 701-275-6083. 3/95

#### EQUIPMENT FOR SALE

PIPE LOCATOR INEXPENSIVE! Locates, traces underground drain, water pipe lines of clay, PVC, ABS, steel, cement. Finds sprinklers, valves, clogs. Bloch and Company, Box 18058, Cleveland, Ohio 44118. (216)371-0979. TF

600 Gallon Lawn & Tree Truck. 1985 Chevy 1 ton built by Professional Turf Specialties. All stainless steel with 3 compartments, area for dry material and spreader storage. In excellent condition, ready to roll. Profit maker! Asking \$7,900, call Steve or Reg 913-782-8315. 3/95

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. 12/95

LAWN and/or TREE CARE TRUCK 1987 Ford F-350, 6.9 1 Diesel, Manual trans, 450 gal. fiberglass tank, 2 hose reels, PTO driven Hydro-Cell D-25. Capable of spraying both lawn and trees, \$6,000. Moyer Lawn Care (215)721-2810, ask for Bob Williamson. 4/95

REINCO HYDROGRASSERS and power mulchers in stock. Opdyke Inc., (Philadelphia Area) 215-721-4444. 3/95

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. 3/95

1988 Ford Super Duty 1 ton with 600 gallon stainless steel tank, including hose and hose reel, electronic flow meter and Meyers 2C95 pump. Like new would cost \$29,000 asking \$19,000. Only has 3,900 miles. Call 618-224-7456. 4/95

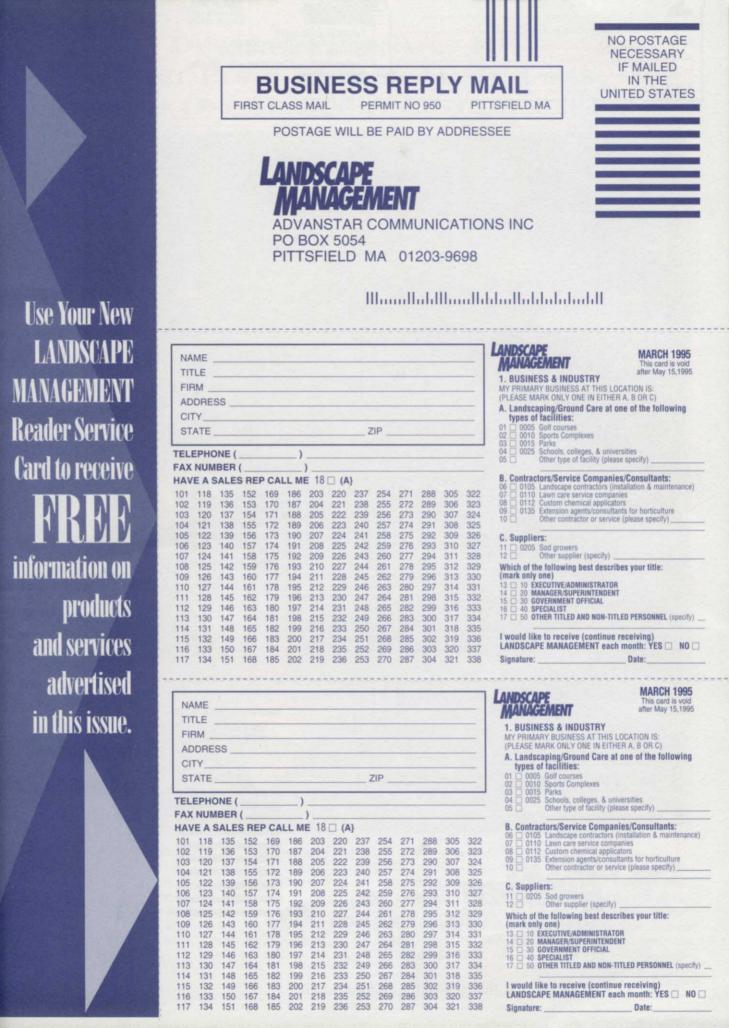


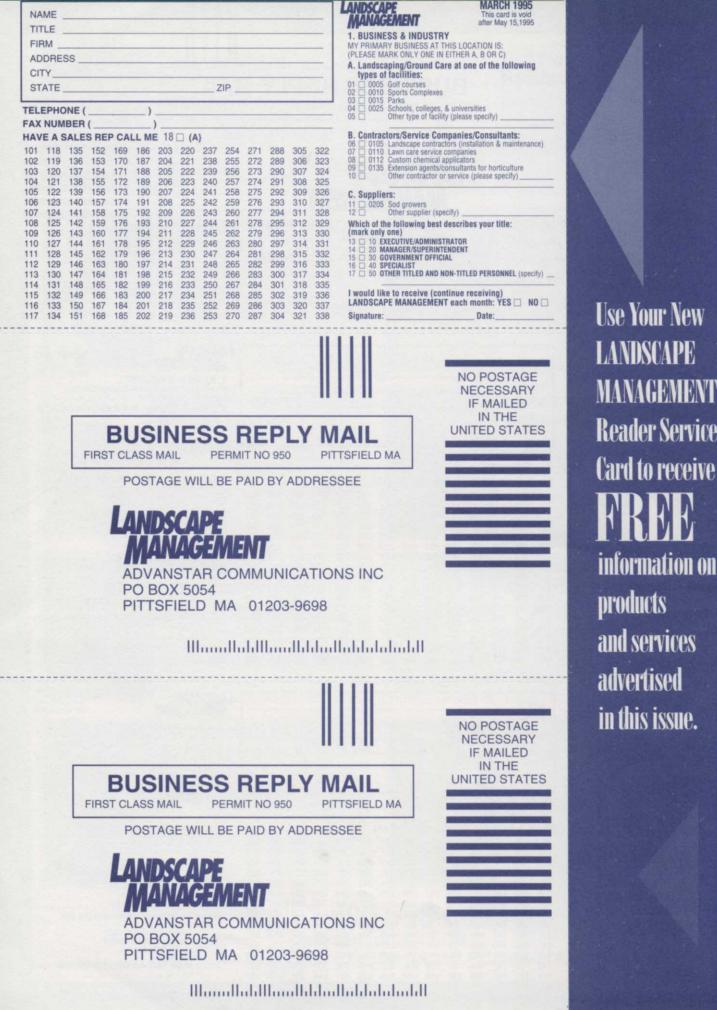
101	Agrevo USA Co /No15G
35	Agrevo USA Co/So15G
102	Akzo15L
103	American Cyanamid17
104	Ciba8-9G
105	Ciba31
106	Cub Cadet7L
107	Dalen5L
	Dow ElancoCv3
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116	John Deere2-3G
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119	LoftsCv4
120	Metromail20L
121	Miles12-13L
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123	Miles
124	Miles1L
125	Miles
126	Pickseed25
127	Riverside Gardens
128	Roots
129	Sandoz19L
130	Scag11L
131	Tee 2 GreenCv2
132	Terra23
133	Toro21
134	Turfco16L
135	Wells Cargo10L

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Completional Characteristics (Contractions)	<b>Compendium of</b> <b>Ornamental Foiliage</b> <b>Plant Diseases</b> <i>by A.R. Chase</i> 92 pages, softcover LSM-BK-415	\$30.00	Turf Managers' Handbook	<b>Turf Managers'</b> <b>Handbook</b> <i>by W.H. Daniel &amp; R.P. Fre</i> 437 pages, hardcover LSM-BK-110	eeborg \$39.95
	Landscape Problem Management by Balakrishna Rao 153 pages, softcover LSM-BK-102	\$39.95	Containment System Design: Chemical Storage, Mixing and Recycling	<b>Containment</b> System Design: Chemical Storage, Mixing and Recycling by Fredric R. Haskett LSM-BK-200	\$74.95
Furd Hanagement Re dif lares	<b>Turf Management</b> <b>for Golf Courses</b> <i>by James Beard</i> 642 pages, hardcover LSM-BK-615	\$77.00	Convertient of Lark and Danae	<b>Compendium of</b> <b>furfgrass Diseases</b> by Richard Smiley, Peter Dernoeden & Bruce Clark 128 pages, softcover LSM-BK-650	\$30.00
THE SHRUB IDENTIFICATION BOOK	<b>The Shrub</b> <b>Identification Book</b> <i>by George Symonds</i> 379 pages, softcover LSM-BK-720	\$19.50		The Tree Identification Book by George Symonds 272 pages, softcover LSM-BK-750	\$17.50
Management of Turfgrass Diseases SECONDEDITION	Management of furfgrass Diseases by J.M. Vargas, Jr. 294 pages, hardcover LSM-BK-764	\$59.95	Dense Vendeler Berne	Managing Turfgrass Pests by Thomas L. Watschke, Peter H. Dernoeden & David J. Shetlar 361 pages, hardcover LSM-BK-766	\$69.95
Α		de the U.S. d	-598-6008 call 216-826-2839 Old Oak Blvd. • Cle	valand OH 44120	

BOOKS | OKE





**Reader Service** Card to receive information on and services advertised in this issue.

### Dursban Eliminates 140 Insect Pests Because All It Takes Is One To Bug A Customer.



Most customers tend to overreact. Discover one lawn pest and they think they're infested. Never mind that most customers can't tell the difference between a sod webworm and a night crawler.

Keeping customers' lawns insect pest free is what Dursban\* insecticide is all about. Not only is it a dependable and economical broad spectrum insecticide, but it has also been formulated to provide you an effective residual on most turfgrasses and ornamentals. One thing for sure, use Dursban and customers

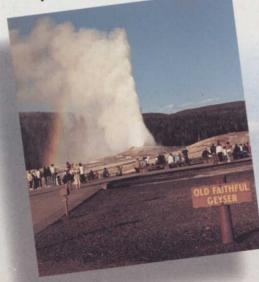
won't be bugging you with their insect pest problems. For further information on Dursban, or any other product

in the extensive line of DowElanco products, give us a call at 1-800-352-6776. Always read and follow label directions.





# Some "Old Faithfuls" Stay the Same...



# ... This One Got Even Better!

Jamestown II Chewings Fescue

Contains endophytes for natural insect resistance

#### What Benefits You Can Expect from Jamestown II

- Natural resistance to surfacefeeding insects because of the endophytes
- Good performance even when mowed as close as 1/4"—or left unmowed
- Less fertilizer requirement
- Less need for irrigation
- Consistent performance in sun or shade
- Excellent cold hardiness
- Blends well with creeping bentgrass while exhibiting resistance to "take-all patch" which can damage bentgrass turf
- A very attractive, lowmaintenance turfgrass

#### Where You Can Use Jamestown II

- Golf courses— lowmaintenance roughs, nonirrigated fairways, limited fertility areas, even as a companion grass with creeping bentgrass on tees, greens or fairways
- Reclamation sites Roadsides — Parks
- Vacation homes or lawns that require less mowing or low-maintenance turf
- In the cooler climates, from Canada to the hills of North Carolina, where an attractive, low-maintenance turf is desired
- Use Jamestown II Chewings Fescue alone or combined with Reliant Hard Fescue in Lofts' Ecology Mix.

The Links of North Dakota at The Red Mike Golf Resort was designed by Stephen Kay with Stan Weeks as Superintendent. Jamestown II Chewings Fescue is included in the fescue/bentgrass mixtures used on the greens and fairways. Roughs are seeded with a Jamestown II/Reliant mixture. Photo is a view of hole #2 on this new course, recently quoted as a "masterplece" by *Golf Digest*.



#### Lofts Seed Inc.

World's largest marketer of turfgrass seed Bound Brook, NJ 08805

Lofts/Great Western Albany, OR (503) 928-3100 (800) 547-4063

Lofts/Ohio Wilmington, OH (513) 382-1127 (800) 328-1127

Lofts/Mar Beltsville, (301) 937-(800) 732ofts/Pennsylvania (llentown, PA 510) 266-6612 800) 708-8873

Lofts/New Engla Arlington, MA (617) 648-7550 (800) 648-7333 Sunbelt Seeds, In Norcross, GA (404) 448-9932 (800) 522-7333

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