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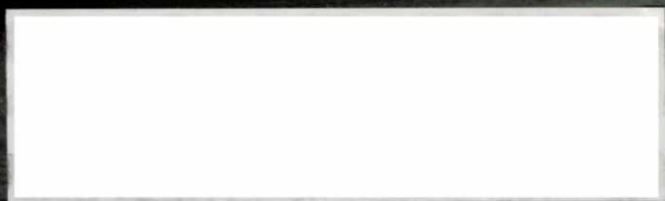
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**Hand sprayers  
for spot treating**

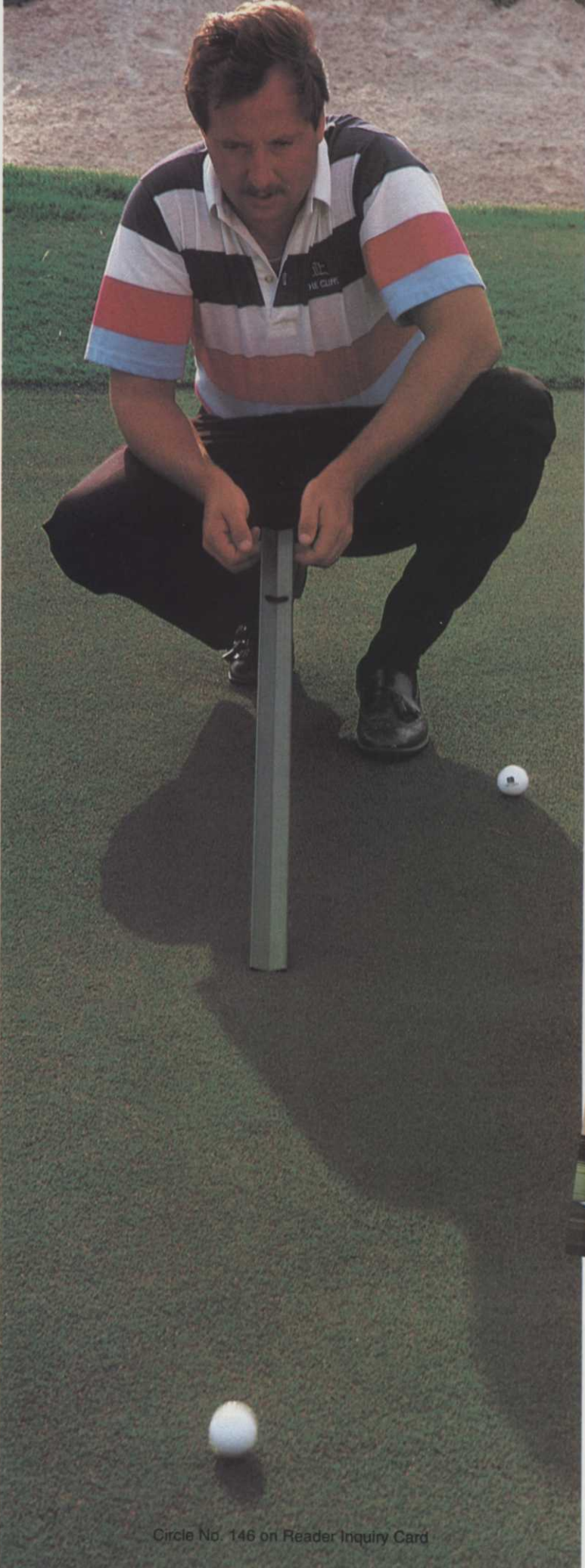
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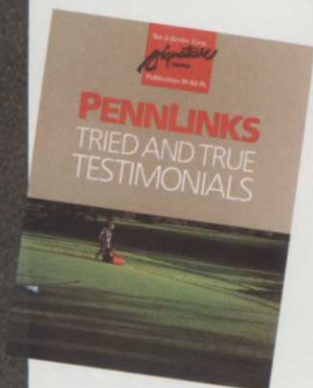
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## AS WE SEE IT

RON HALL, SENIOR EDITOR



### Big deals open lawn care season

There's nothing so predictable in the green industry as change. The significant change in the lawn care segment of the industry can come from only one of two directions.

It can come from above, from the big boys, the really big and visible lawn care companies.

Or, it can—because of ever-growing client knowledge and interest—seep up from the consuming public.

Well, the big boys *have* been busy.

That's good news for us journalists—more grist for the mill and all that stuff.

It's also encouraging news for the professional lawn care segment of the green industry.

It demonstrates that somebody continues to care a lot about the application business. Somebody (lots of somebodies?) still thinks there's enough opportunity in it to invest a few million dollars, a *mere* few million dollars.

Early in January Barefoot Lawn Services Inc., headquartered in Worthington, Ohio, added to its 280,000 customer base by buying three Ohio branches from Lawnmark, based in Hudson, Ohio. It acquired Lawnmark's Akron, Canton and Wooster operations. Only Wooster didn't already have Barefoot service.

"We already had a presence in northeast Ohio," Patrick Norton, president of Barefoot Lawn, tells LANDSCAPE MANAGEMENT magazine. "This will solidify our presence there."

Lawnmark, now about 20 percent smaller than it was before the transaction, will grow again, but mostly in New York State. Says Marty Erbaugh, Lawnmark president: "We've enhanced our financial position, put ourselves in a position to expand in the Northeast."

This wasn't a blockbuster deal, not considering that Barefoot, with sales of

over \$50 last year, paid \$2.6 million for the business. It does show that industry leaders are still out there pitching. They're still hungry.

The bigger deal—about \$33 million, sources say—involved industry giant ChemLawn.

FirstService, headquartered in Toronto, bought ChemLawn Canada and Green Lawn Care from EcoLab, Inc., Minneapolis.

This makes FirstService the top lawn care company in Canada. It picks up 110,000 lawn care and 20,000 tree and shrub care customers from 11 company-owned branches in Ontario and Quebec.

It also gives FirstService President Jay Hennick visions of using the company's marketing and franchising expertise to build a much larger network of related lawn care companies across Canada. But, that's probably down the road a few years. FirstService is a very young company.

Hennick—he's come a long way since starting Superior Pool, Spa & Leisure in 1972—seems to be genuinely excited about the lawn care market in Canada.

The ChemLawn operation—with revenues of \$23 million in 1991—is a model of service delivery, he tells LM. And FirstService (or, more accurately, its newly formed lawn care subsidiary Greenspace Services Ltd.) has the added advantage of retaining the ChemLawn Canada management.

FirstService owns 80 percent of Greenspace Services; senior Chem-Lawn Canada management owns the rest. Dr. William Black, former head of CC, is now president of Greenspace.

"FirstService's demonstrated franchise expertise coupled with our industry knowledge will allow us to reach into many more markets than we have to date," says Black.

# LANDSCAPE MANAGEMENT

INCORPORATING LAWN CARE INDUSTRY

FEBRUARY 1992 VOL. 31, NO. 2

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Judicious, well-timed spring fertilization can aid in disease and weed prevention and enhance overall turfgrass quality.

*Tony Koski, Ph.D.*



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Today's irrigation technology gives turf managers near-psychoic ability to forecast plant water requirements and compensate for dry spells.

*Terry McIver*

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Last year's drought deeply affected athletic fields, especially in the Midwest. Experts from all over the country discuss how to prepare fields for summer play.

*Jerry Roche*

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Gene Short, sales manager for Green Garde/Division of H.D. Hudson Manufacturing in Chicago, offers suggestions for choosing, and safely using compression sprayers.

*Ron Hall*

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'If you've got people, you can do just about anything,' says an expert on personnel.

*Jerry Roche*

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*Ron Hall*

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People often say, 'If I can make it through the first quarter, I'll be all right with cash flow.' There are ways, however, to minimize—or possibly eliminate—your cash crunch.

*Ed Wandtke*

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The biggest chance you have of injuring yourself while operating a snow thrower is by putting your hands where you shouldn't.

### 48 The marketing plan

As the Cheshire Cat told Alice, it doesn't matter what road you take if you don't know where you want to go.

*Rudd McGary, Ph.D.*

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Ed Walsh, superintendent of the Ridgewood Country Club in Paramus, N.J., learned first-hand what sort of course conditions the USGA requires for tournament play.

*Terry McIver*

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Pre-emergence herbicides are primarily applied in the spring for controlling smooth and large crabgrass and goosegrass. Many, however, will control other summer annual weedy grasses such as foxtails, barnyardgrass, crowfoot and fall panicum.

*W.M. Lewis, Ph.D.*

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*Jerry B. Sartain*

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*Craig W. Edminster*

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A leading entomologist says turf managers, with some simple temperature calculations, can anticipate insect problems.

*Ron Hall*

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Developers of alternative lawn care programs say the message to clients should be agronomic, not anti-chemical.

*Ron Hall*

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The turfgrass plant that doesn't grow as high or as quickly (and doesn't replace its leaves as quickly or often) must also possess unusual agronomic vigor to survive in home lawns or on golf courses.

*Ron Hall*

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What the green industry and the public perceive as 'organic' is not the same. We must talk the same language concerning today's fertilizer products, says Dr. Chuck Darrah.

*Ron Hall*



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# LANDSCAPE MANAGEMENT

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**VBPA ABP**

# ASK THE EXPERT

DR. BALAKRISHNA RAO



## Rhododendron dieback

**Problem:** Rhododendron plants in some of our clients' properties are showing twig dieback in random places. This problem is more prevalent than in previous years. What do you think the problem is, and how do we manage it? (Pennsylvania)

**Solution:** It would be difficult to diagnose problems without much background information and/or on-site inspection. Based on your field observation, the problem may be related to borer insect damage, canker disease, root rot or abiotic disorders.

Look for any holes on plants indicative of borer damage. Where rhododendron borers are active, plants may appear drought-stressed. Look for holes in bark often present at limb crotches. Another pest, rhododendron stem borer, also can cause twig dieback. In this case, look for clusters of small holes in twigs and stems.

Applying insecticides such as Dursban during mid-May and again in mid-June should help manage these pests. Sex pheromone traps may also be useful to provide timely treatments.

Twig dieback and discoloration may also be due to canker-causing fungi such as *Botryosphaeria ribis*. Prune and destroy infected plant parts. Prune when dry, and disinfect tools in Lysol, rubbing alcohol or Clorox (1:4 dilution) to minimize disease spread. Last year, we saw a number of plants with this problem.

Diebacks can also be caused by *Phytophthora* spp. Prune affected plant parts when dry. As new leaves emerge, treat with mancozeb, three times at 7- to 10-day intervals, or apply Subdue or Aliette as a soil drench to manage this disease.

Last year, some rhododendrons showed dieback without any insect or disease activity. This was attributed to abiotic disorder, particularly the moisture stress due to severe drought. Provide selective pruning of dead branches, fertilize, water and use pest management controls as needed to improve plant life.

## Controlling turf insects

**Problem:** When is the best time to apply insect control to turf? (New York)

**Solution:** Your question doesn't refer to any specific insect control. Therefore, I am going to discuss the topic in general.

The best time to treat for insect control, in general, would be when the insects are active during the growing season. Types of insect problems, their activity period and the number of generations per year may vary from one region to another.

Knowing pest activity period, damaging stage(s) and the life cycle are necessary in dealing with pest problems.

Based on their inhabiting and/or feeding activity, most of the common destructive turf pests in your area can be grouped into surface- and subsurface-feeding insects. Among the surface-feeding insects, the most common pests in lawns will be chinch

bugs, sod webworms and billbugs. Occasionally, you may also find cutworms, armyworms, etc.

As mentioned earlier, insecticides usually are applied during the pest's peak activity period, for economic and practical reasons.

For sod webworms and chinch bugs, this would be during May and June. Reports suggest that the most ideal time for sod webworm control would be 10 to 15 days after observing the adult moths flying over lawns at dusk. During this period, eggs dropped by the female moths hatch and young larvae are susceptible to the insecticide treatment. Sod webworm larvae hide in the thatch inside a cocoon during daytime and feed at night at the base of tillers, without killing the crown. Turf generally recovers with the onset of good weather and adequate moisture.

Chinch bugs go through five developmental stages of nymphs prior to becoming adults. Because of overlapping generations, you may expect to find any of these stages. All stages feed on turf; therefore, applying insecticides during their peak activity (May and June) should provide adequate control. During feeding, the chinch bugs secrete toxic materials and kill the turf. Severely damaged areas may require seeding.

Although billbug larvae also actively feed during May and June, treatment during this period may not give satisfactory results. Research indicates that billbug larvae—soil-inhabiting, root-feeding pests—are difficult to control. A report from the Ohio Agricultural Research and Development Center (OARDC) suggests treating in mid-April for billbug adult control before they have a chance to lay eggs, which eliminates or minimizes future generations.

Billbug adults feed on turfgrass leaves and make C-shaped notching. The eggs deposited in the tillers hatch into legless larvae which tunnel down through the tiller and crown to the soil and become root-feeding, subsurface pests. Affected turfgrass will be killed and requires seeding.

When dealing with subsurface, root-feeding white grubs, such as Japanese beetle, European chafer, May-June beetle, masked chafer, etc., you can control with insecticides either in spring or fall. In the spring, grubs are difficult to control because they are more mature and have a short feeding period before becoming pupae and adults. Therefore, materials should be applied early in the life cycle to get satisfactory results. The best time to treat for grubs would be during July or August, or later in the fall when young grubs feed for two to three months. Untreated, they eventually mature and move deep into the soil as its temperature drops below 55° in the fall. Severely affected areas may require seeding.

*Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.*

**Questions should be mailed to ASK THE EXPERT, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2 to 3 months for an answer to appear in the magazine.**

A white tractor is plowing a field at sunset. The sky is a gradient of orange and purple, and the field is dark with visible furrows. A line of trees is visible in the background.

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# People use a herbicides. Mild usually

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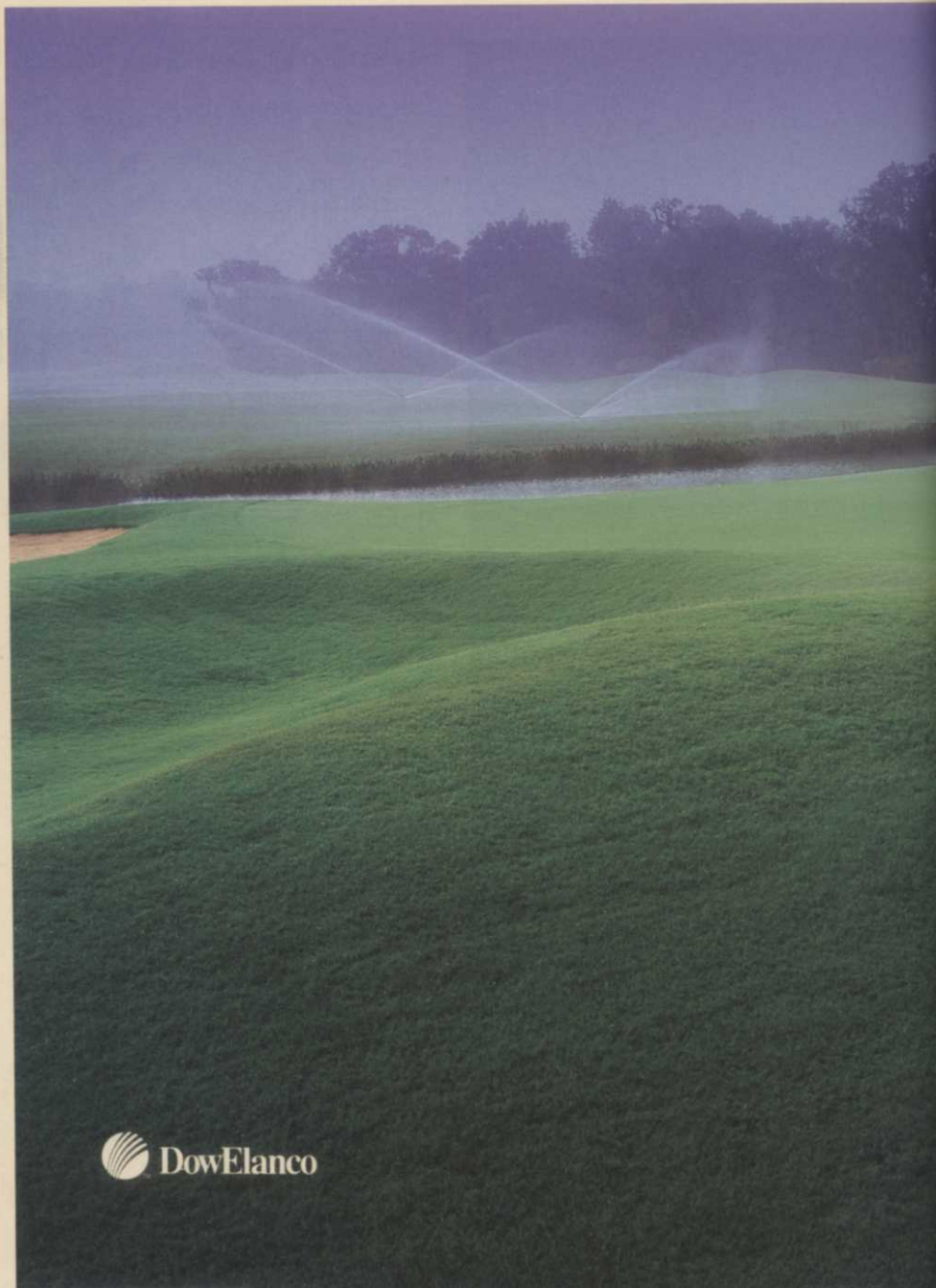
University studies show crabgrass and goosegrass germinate when soil at 2" reaches the following temperatures for three consecutive days: loam 50-52°F, heavy wet clay 53-57°F, sand 49-51°F. Measuring soil temperature allows you to predict germination, and time your herbicide application for

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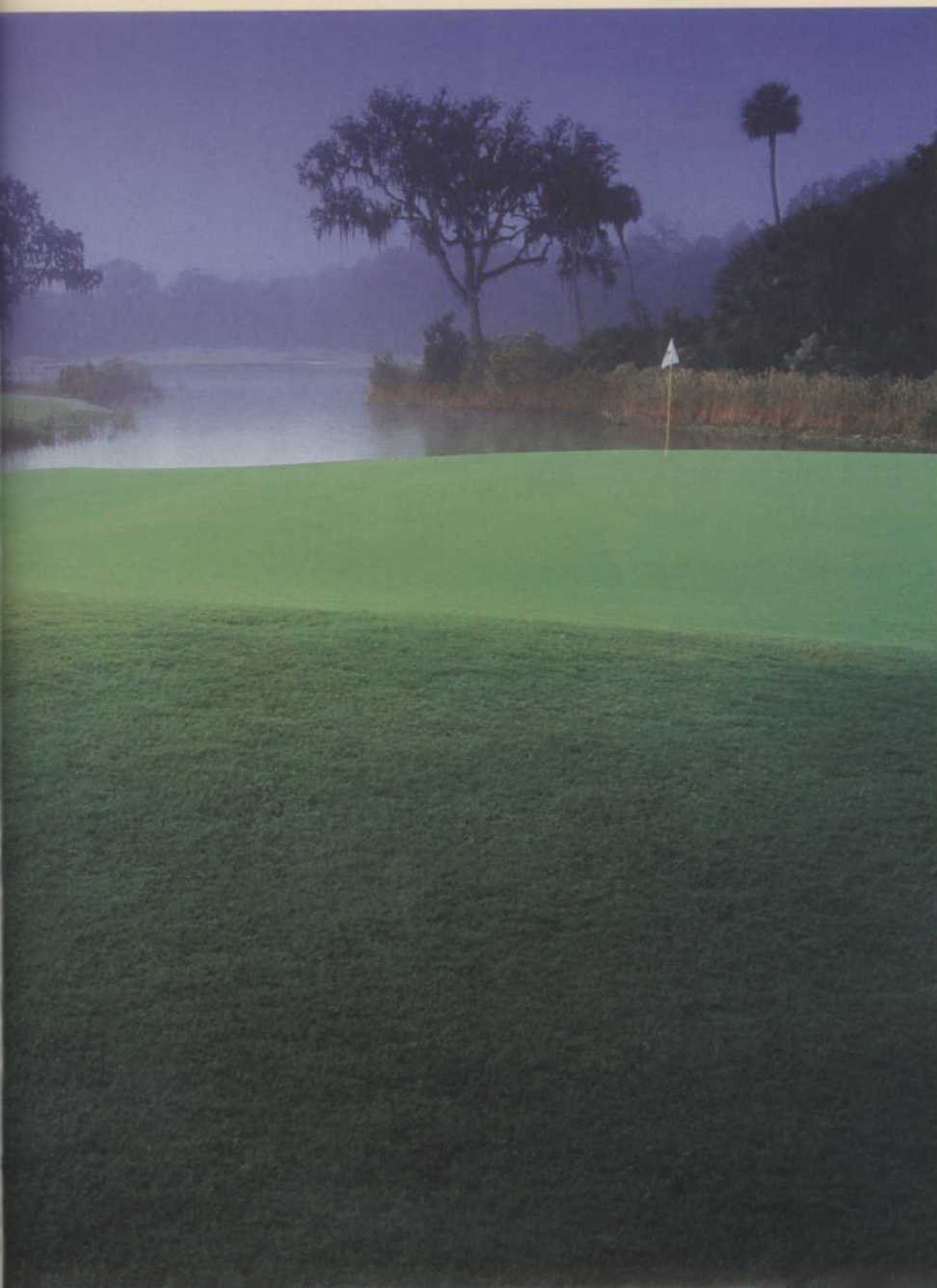
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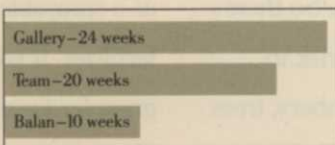
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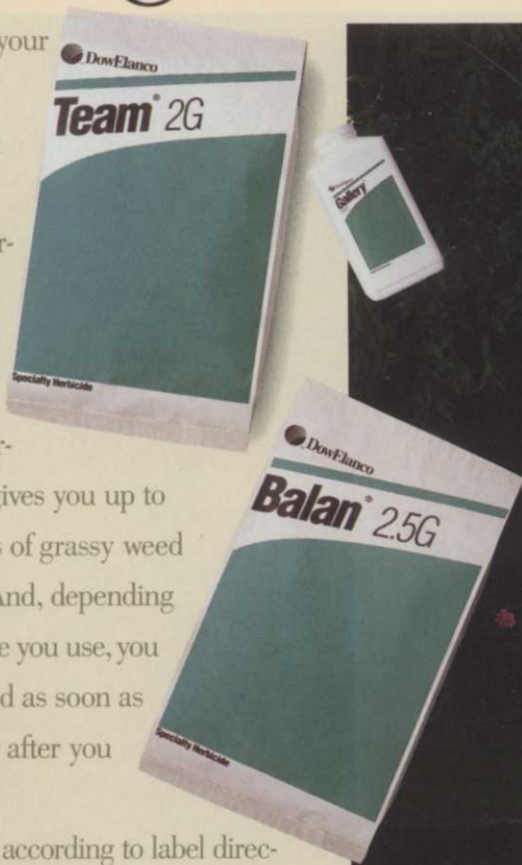
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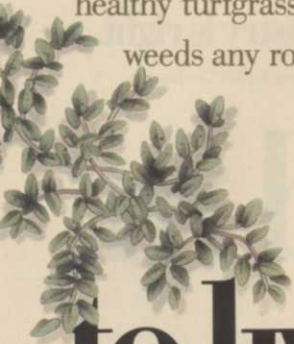
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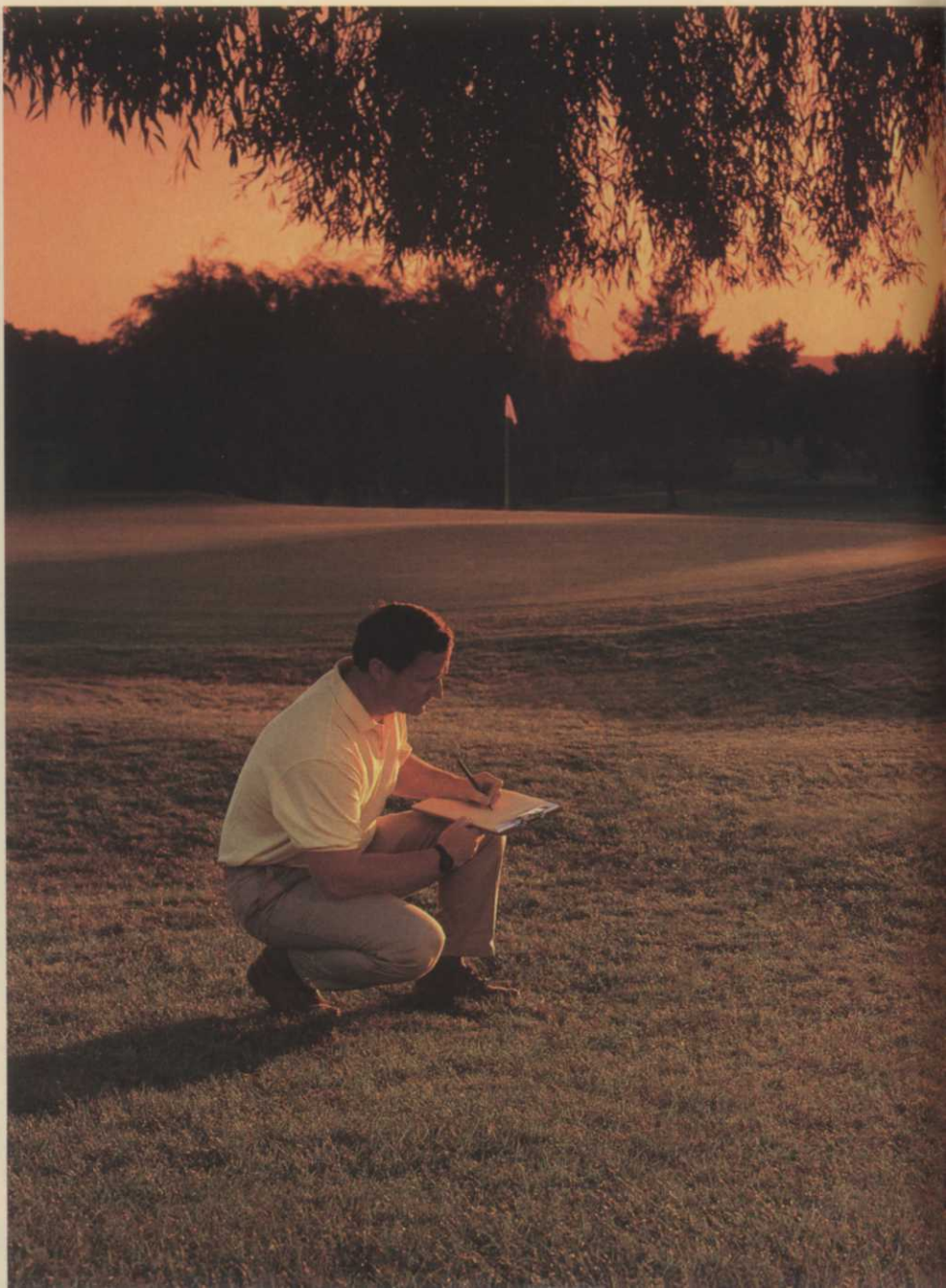


growth regulator to your maintenance program. Cutless makes turf thicker and more competitive by slowing its growth while encouraging more tillers and stolons. It also inhibits weed growth. This results in a gradual crowding out

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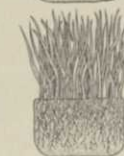
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ways to control insects and turf

diseases. For a free copy return the coupon, or call our toll-free number. Because a thick blanket of turf doesn't need a thick blanket of chemicals.



Thicker turf crowds out weeds, reducing the need for herbicide.

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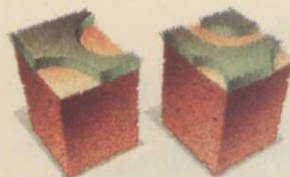
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We're talking about a control program that's very hard on fungus, yet very easy on your turf-grass. Some things you can do to reduce turf stress, use less

fungicide and still get excellent control.

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*Rubigan has broad spectrum control that makes diagnosis less critical.*

ing. Providing adequate fertilizer. And removing thatch. They'll make your turf less susceptible to disease, which means you can use less fungicide to protect it.

# Just imagine. A a stranglehold on fungus





Knowing when to use a fungicide is important, too. By watching for conditions in which turf diseases thrive (weather patterns and soil temperature provide some very



And, of course, it helps to choose your fungicide carefully. Gentle, long-lasting Rubigan\* fungicide is a very good choice. It controls 14 diseases, includ-

*Fungus attacks plants from within. The results can be devastating.*

also contains complete information on tactics you can use to control weeds and insects more responsibly. For a free copy just return the coupon below, or call our toll free telephone number. And learn

# ...a kinder, gentler way to get

reliable signs), you can put down fungicide with perfect timing, and make fewer applications.

ing Bermudagrass decline, dollar spot and powdery mildew. It's very easy on your turf. And it lasts longer than other fungicides, which means you don't have to apply it as often.

some very nice alternatives to applying a lot of fungicide.

*Rubigan and Broadway last longer than other fungicides, so you don't have to apply them as often.*



## Poa annua control that doubles as fungus control.

Applied in the fall, Rubigan delivers 75 to 95 percent *Poa annua* control in overseeded areas such as greens, tees, collars, slopes and approaches (we explain how in the book offered below). At the same time, Rubigan protects your turf from fungus. Which means you can handle two jobs with the same pesticide application.



*Poa annua*

For brown patch, you can use Broadway\* fungicide. Its two modes of action provide excellent brown patch control. It also controls a dozen other turf diseases. It's easy on your turf. And its long-lasting action means fewer applications.

Of course, there's a lot more to fungus control than what fits in this ad. You'll find it in our 44-page book, The Turf Manager's Guide To Responsible Pest Management. It

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What you're looking at is a way to go an entire season on a single herbicide application—a control zone in the top inch of soil that keeps weeds from

one application gives you up to eight full months of control. If you like what Surflan does, but prefer a granular form, you can use XL\* herbicide. It



*Surflan is so mild it can be applied over the top of delicate ornamentals.*

our 40-page book, The Nursery And Landscape Guide To Responsible Pest Management. It also contains information on better ways to con-



# Actually, the most this picture is contained

germinating all season long. It can greatly reduce your use of post-emergence herbicides and hand-weeding in your ornamentals.

contains the same active ingredient as Surflan. Apply it in the spring, and you'll get a full season of broad-spectrum grassy weed

### How To Make Your First Roundup Your Last Roundup.

Here's a way to make your first application of Roundup herbicide last all season. Mix 3 oz. of Surflan per 1000 square feet with ¼ oz. of Roundup per gallon of water and apply when weeds are less than 6" tall. Roundup will knock the weeds down, and Surflan will keep them from coming back for the rest of the season.

We have three different pre-emergence herbicides that make this possible. All of them are very gentle on your plants. And they bind tightly to soil particles, which makes them very resistant to leaching.



*Our preemergence herbicides set up a gentle control zone that keeps weeds from germinating all season.*

If you're looking for grassy weed control, you can use Surflan\* preemergence herbicide. Surflan is, in fact, so gentle that you can spray it directly over the top of delicate ornamentals. Yet

control.

And for woody ornamentals, you can use Snapshot\* herbicide.

It controls both grassy and broadleaf weeds. A single application lasts up to eight months. And it's available as a sprayable or in a granular form.

We can show you lots of ways to control weeds more safely and effectively. They're explained in





control insects and diseases.

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Because you don't need a lot of herbicide to get beautiful results.

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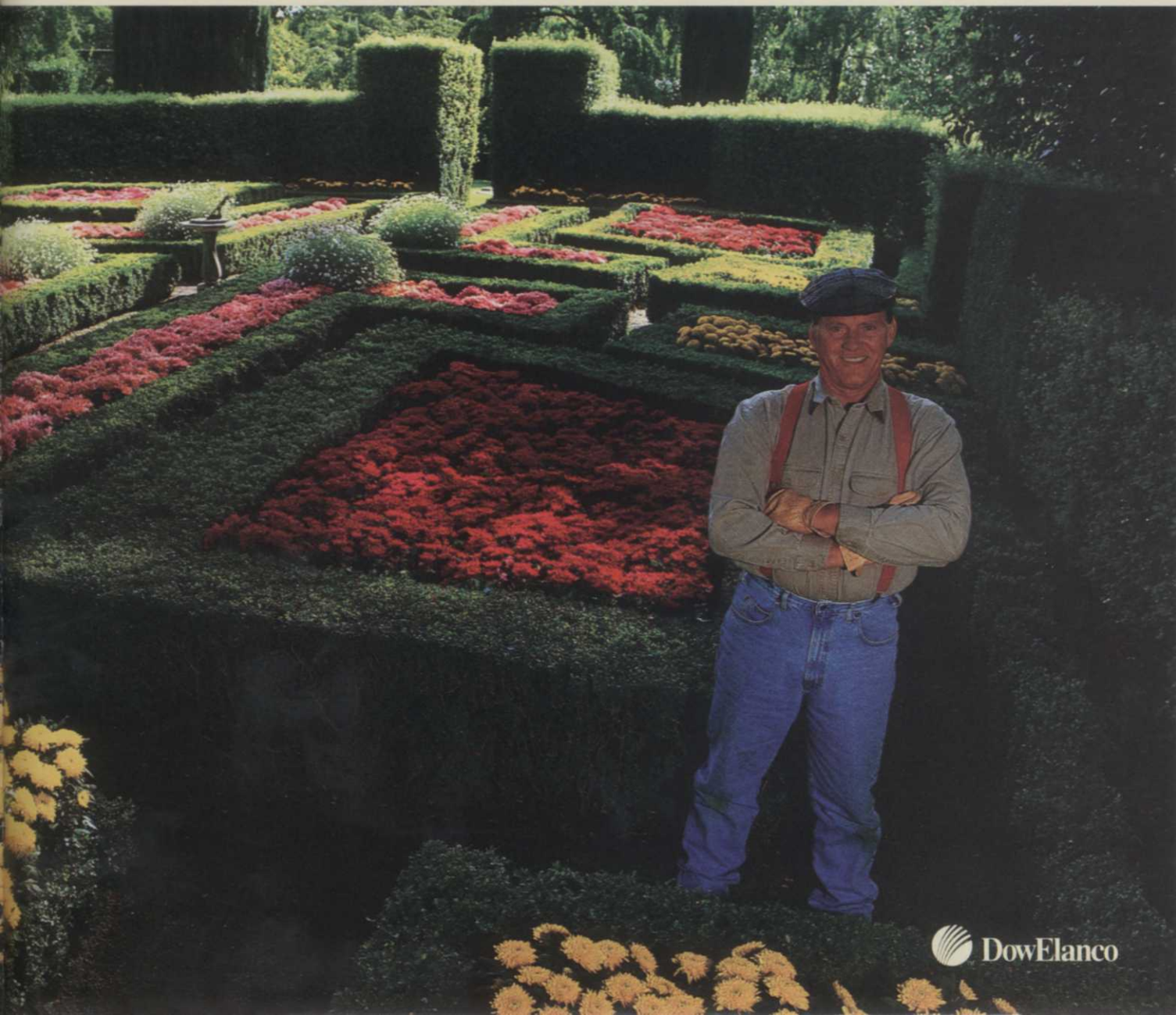
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# st beautiful thing about ned in the top 1" of soil.



You might think using less insecticide means you'll have to put up with more insects. But that's not necessarily the case. Because *how* you use your insecticide is as important as *how much* you use. With

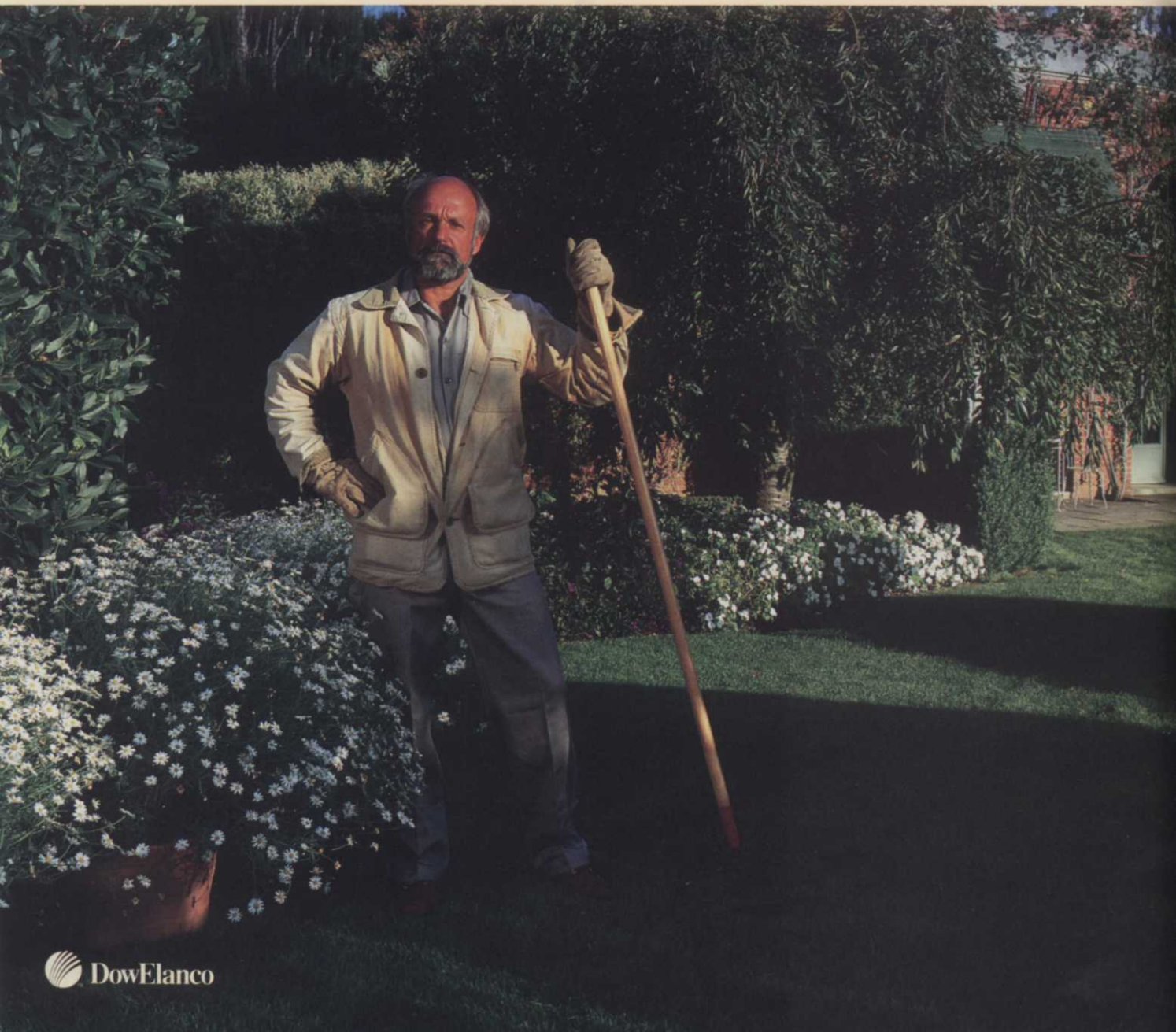
the right tactics, you can use a lot less and still get excellent results.

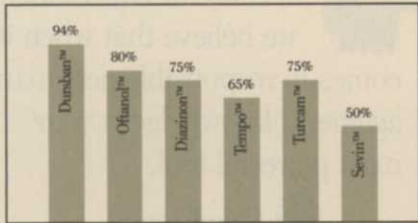
Here's an example. Mixing insecticide with insecticidal soap can reduce the amount of insecticide you need on your ornamentals by

about 50 percent. Soap controls most soft-bodied insects and mites. By adding insecticide, you'll also take care of tougher insects, like scales and worms. University studies suggest you may get better control



# A few ways to balance with your love for the env





Studies show that Dursban delivers better chinch bug control at lower rates than other insecticides.

than you get with insecticide alone.

Knowing exactly when to apply insecticide helps, too. One way to monitor mole crickets, chinch bugs, webworms and cutworms is by mixing 1½ oz. of dish soap in two

gives you so much control at such a low rate. Dursban also controls fire ants. It's available in water-soluble packets. And it can be bio-monitored, which can reduce the likelihood of over-exposure.

# Once your hate for insects ironment.

gallons of water and sprinkling it on a four-foot area of turf. If eggs have hatched, this soapy mixture will flush insects to the surface, and you can apply insecticide

Now, we realize you probably have some questions. That's why we created The Turf Manager's Guide To Responsible Pest Management.

It's 44 pages packed with comprehensive information on the latest techniques for controlling insects, weeds and

turf diseases. For a free copy return the coupon, or call our toll-free telephone number. Because when you apply a little knowledge, you don't need to apply as much insecticide.



### Mole Crickets Getting Under Your Skin?

University studies show that Pageant DF\* insecticide (which contains the same active ingredient as Dursban) provides excellent mole cricket control. Apply two weeks after egg hatch and irrigate turf 24 hours before and after application. This moves mole crickets near the soil surface and



washes Pageant into the zone of insect activity.

Mole Cricket

accordingly.

Your insecticide itself can also make a difference. After all, different insecticides work at different rates. Which is why Dursban\* insecticide could be your best choice.

Just one pound active ingredient per acre controls a host of problem insects. No other insecticide

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**The chemistry is right.™**

Dursban is available in liquid, dry flowable, granular and fertilizer formulations. \*Trademark of DowElanco. © 1992 DowElanco. 02






What you've read on the preceding pages only begins to outline a responsible pest management program.


You'll find a lot more in our guides to responsible pest management (see

coupon on previous page), and in the literature listed below.

If you have questions on our products, call one of our technical specialists at 1-800-352-6776. We'll be happy to help you out.



Because at DowElanco, we believe that when it comes to responsible pest management, knowledge is your most powerful tool.

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# If we've piqued your interest, keep reading.

*The literature below is some of the best information you can get on responsible pest management. Check your state university or write the publisher to find out where it's available.*

Johnson, W.T. and H.H. Lyon. 1988. Insects That Feed on Trees and Shrubs. 2nd Ed. Cornell University Press, Ithaca, NY. 556 pp.

Tashiro, H. 1987. Turfgrass Insects of the United States and Canada. Cornell University Press, Ithaca, NY. 391 pp.

Niemczyk, H.D. 1981. Destructive Turf Insects. HDN Books, Wooster, OH. 48 pp.

Decker, H.F. and J.M. Decker, 1988. Lawn Care: A Handbook for Professionals. Prentice-Hall, Inc. 270 pp.

Pirone, P.P. 1978. Diseases and Pests of Ornamental Plants. 5th Ed. John Wiley & Sons, Inc. 565 pp.

Ware, G.W. 1988. Complete Guide to Pest Control With and Without Chemicals. Thomson Publications, Fresno, CA. 304 pp.

Beard, J.B. 1982. Turf Management for Golf Courses. Macmillan Publishing Co. 642 pp.

Turgeon, A.J. 1985. Turfgrass Management. Prentice Hall, Inc. 416 pp.

Smiley, R.W. 1983. Compendium of Turfgrass Diseases. American Phytopathology Society. St. Paul, MN. 102 pp.

Sadof, C.S. 1990. Ornamental Insects: Recommendations for Managing Insects on Shade Trees and Shrubs. Purdue University Coop. Ext. Ser. Pub. E-41. 48 pp.

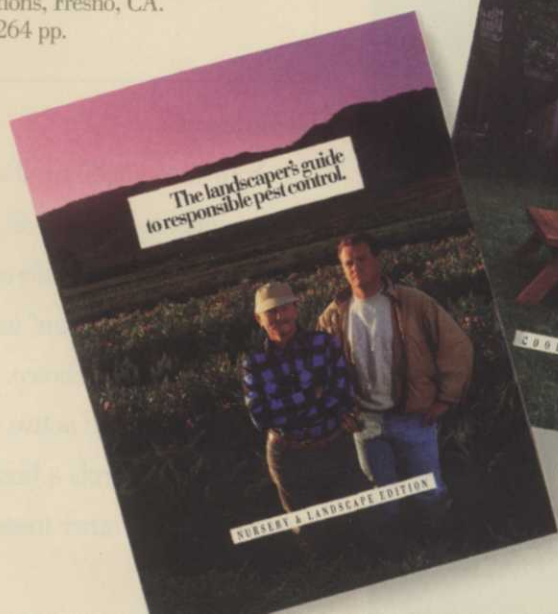
Ascerno, M.E. 1991. Insect Phenology and Integrated Pest Management. J. Arboriculture, 17: 13-15.

Orton, D.A. 1989. Coincide: The Orton System of Pest Management. Plantmens Publications, Flossmoor, IL. 189 pp.

Metcalf, R.L. and Luckmann. 1975. Introduction to Insect Pest Management. John Wiley and Sons. 587 pp.

Smith, E.M. 1991. 1991 Chemical Weed Control in Commercial Nursery & Landscape Plantings. Ohio Coop. Ext. Serv. Pub. No. MM-297. 20 pp.

Price, R.P. 1986. Nursery and Landscape Weed Control Manual. Thomson Publications, Fresno, CA. 264 pp.



## COVER STORY

# Early-season turf fertilization concepts

Some turf managers have found that they can substantially reduce annual N rates by using iron, without sacrificing turf quality.

**Judicious, well-timed spring fertilization can aid in disease and weed prevention and enhance overall turf quality.**

by Tony Koski, Ph.D.,  
Colorado State University

■ Late-season fertilization is commonplace in most cool-season turfgrass fertilization programs, and even with warm-season species in the transition zone and southern regions. However, quality turf cannot be sustained without some kind of early-season fertilization.

Certainly, applying too much N in spring causes more mowings and increases the likelihood of turf diseases. Concerns about the potential for water contamination via runoff and leaching force us to more closely consider N sources, application rates, and in which situations we should—or should not—be using that fertilizer.

**Stimulate color, not growth**—This is a good rule-of-thumb for the average turf that is not subjected to intensive wear. On a heavily used soccer field, however, N

TABLE 1

## TURFGRASS N REQUIREMENTS

(lbs. N/1000 sq. ft.)

	Desired quality and management level	
	Lower	Higher
<b>Cool-season species</b>		
Bentgrass	1-3*	3-8
Fine fescues	0.5-2	2-4
Common Kentucky bluegrass	1-2	2-4
Improved Kentucky bluegrass	1.5-3	3-6
Perennial ryegrass	2-4	4-6
Tall fescue	1-2	3-5
Wheatgrass	0-2	2-4
<b>Warm-season species</b>		
Bahlagrass	0-1	2-4
Bermudagrass	1-4	3-8
Buffalograss/blue grama	0-1	2-3
Carpetgrass	1.5-3	4-6
Centipedegrass	0-1	2-4
St. Augustinegrass	2-4	5-7
Zoysiagrass	2-4	5-7

\* Lower rates for shorter growing seasons and/or on heavy soils. Higher rates used where growing season is longer; soils are sandy; precipitation rates are high; clippings are routinely removed.

Source: Dr. Koski

must be applied more frequently to stimulate the growth that promotes better wear tolerance and speeds recovery from intense foot traffic. Common sense must be used in determining frequency and amount of fertilizer to apply. The proper amount will vary with species, desired quality level, and what the turf is used for. (Annual N requirements for cool- and warm-season lawns, Table 1.)

Some turf managers rely on residual activity of fertilizer sources to carry them from one application to the next. In Table 2, note that those fertilizers which promote rapid greening possess short residual activity, and that the potential for fertilizer burn is higher with these quickly-available sources. On the other hand, the quickly-available N sources are less affected by temperature and are less expensive per pound of N. Slowly-available N fertilizers provide more even feeding and longer residual activity than fertilizers like urea or ammonium sulfate. However, some

TABLE 2  
**INFLUENCE OF NITROGEN FERTILIZATION ON DISEASE INCIDENCE**

Severity increases with under-fertilization		Severity increases with over-fertilization	
<b>Cool-season turfgrass diseases</b>			
Anthracnose			Brown patch
Dollar spot			Leaf spot
Red thread			Melting out
Rust			Pythium blight
			Pythium blight
<b>Warm-season turfgrass diseases</b>			
Anthracnose			Brown patch
Cercospora leaf spot			Gray leaf spot
Dollar spot			Leaf spot
Rust			Melting out
			Pythium blight
			Spring dead spot

Source: Dr. Koski

TABLE 3  
**CHARACTERISTICS OF NITROGEN FERTILIZERS**

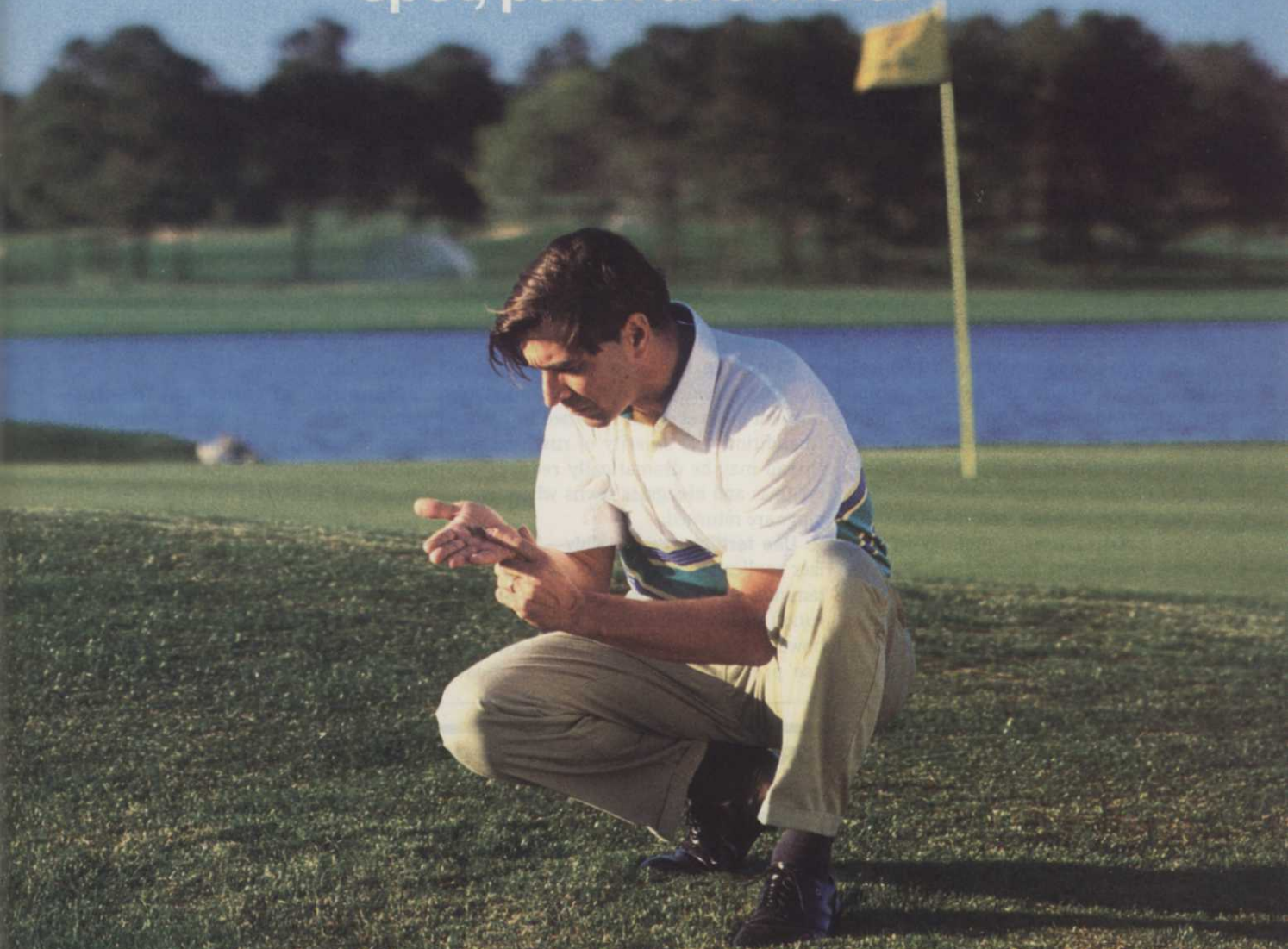
Fertilizer name	Analysis	Source of N	Moisture dependence	Low temperature response	Residual N activity	Salt index (per N unit)	Leaching potential
<b>Quickly-available N fertilizers</b>							
Ammonium nitrate	33-0-0	ammonium nitrate	minimum	rapid	4-6 weeks	3.2	high
Ammonium sulfate	21-0-0	ammonium sulfate	minimum	rapid	4-6 weeks	3.3	high
Ammonium phosphate	18-46-0	diammonium phosphate	minimum	rapid	4-6 weeks	1.6	high
Urea	46-0-0	urea	minimum	rapid	4-6 weeks	1.6	moderate
<b>Slowly-available N fertilizers</b>							
<b>Slow-release sources</b>							
Sulfur-coated urea	22-38% N	urea	moderate	mod. rapid	10-15 weeks	NA	low
ONCE	24-35% N	urea, nitrate, ammon. N	moderate	mod. rapid	15-36 weeks	NA	low
<b>Slow-soluble sources</b>							
IBDU	31-0-0	isobutylidene diurea	high	mod. rapid	10-16 weeks	0.2	mod.-low
<b>Ureaform reaction fertilizers</b>							
Nirtoform	38-0-0	ureaformaldehyde	high	slow	10-30 weeks+	0.3	very low
FLUF	18-0-0	urea/ureaformaldehyde	moderate	medium	6-10 weeks	NA	low
Nutralene	40-0-0	methylene ureas	moderate	medium	7-9 weeks	NA	low
Methylene urea	39-0-0	methylene ureas	moderate	medium	7-9 weeks	0.7	low
Coron	28-0-0	urea/methylene ureas	minimal	mod. rapid	7-9 weeks	NA	moderate
N-Sure	28-0-0	triazone/urea sol.	minimal	mod. rapid	6-9 weeks	NA	moderate
<b>Natural organic fertilizers</b>							
Ringer	6-1-3	blood, bone, seed meals	high	medium	10-12 weeks	0.7	low
Sustaine	5-2-4	composted turkey waste	high	medium	10-12 weeks	0.7	low
Milorganite	6-2-0	activated sludge	high	slow	10-12 weeks	0.7	low

Inclusion of products does not imply endorsement, nor does exclusion imply criticism.

Source: Dr. Koski



For the turf manager who worries about every spot, patch and mold.



Now there's Curalan™ fungicide.

Now broad spectrum CURALAN controls eight diseases without harm to turf so turf managers can sleep nights.

**Brown patch and dollar spot control.** CURALAN controls these tough diseases plus six more including leaf spot, Fusarium patch and grey snow mold.

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**BASF**

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slowly-available fertilizers may provide a slow initial green-up, especially under cool, dry spring conditions.

Slow response can be offset with high rates (1.5 to 2 lbs. actual N per 1000 sq. ft.) of the slowly-available sources, as is often done with straight ureaform and natural organics.

This is one of those rare instances in which more than 1 lb. of N per 1000 sq. ft. can be safely applied. Unless you wish to adhere to a strictly natural organic program, it is wiser and easier to apply a blend of quickly- and slowly-available N sources in the early season.

The resin-coated product called "Once" allows you to fertilize once in the spring and yet provide even greening throughout the growing season. This fertilizer has performed impressively in three years of testing at Colorado State University.

**Use N for disease control**—Over- or under-fertilization, especially in the spring, can result in turfgrass disease problems (Table 2). Red thread can be a problem during moist, cool springs on fine fescue and perennial ryes if they are under-fertilized and not growing at a satis-

factory rate. On the other hand, diseases like stripe smut can become severe if susceptible Kentucky bluegrass cultivars get too much fertilizer during the spring.

Research at Cornell University and other universities shows that nitrogen sources may also play an important role in suppressing certain diseases. That work suggests that natural organic fertilizers and composts, when used as turf fertilizers, can sometimes reduce the incidence or severity of diseases like brown patch, necrotic ring spot, red thread, dollar spot and pythium root rot. Success may vary depending on fertilizer and location.

**Clippings return nutrients**—Grass clippings provide legitimate and important nutrient sources when returned to lawns. In addition, the severity of rust and red thread may be dramatically reduced on ryegrass and bluegrass lawns where clippings are returned.

**Use fertilizer responsibly**—Any fertilizer application has the *potential* to contaminate water resources through surface runoff or leaching. Continuing research, however, indicates that careful fertilizer use presents negligible risk to most

ground and surface water sources.

Using water-soluble fertilizers on sandy soils with high precipitation or irrigation rates greatly increases the potential for groundwater contamination.

Runoff from turf sites probably presents little hazard to water quality. However, sloppy application of fertilizer onto hard surfaces like driveways and streets will obviously present a problem when that fertilizer (which often is a pesticide carrier) is carried into storm drains with precipitation. The responsible applicator will guard against this altogether, or clean up any mistakes by sweeping up the mis-applied material.

**Benefits of other nutrients**—Remember to test for and maintain adequate potassium levels for your soil type. Research shows that potassium can be an important enhancer of wear, heat and drought stress on both cool- and warm-season species. Try reducing the amount of N you use by making iron a more important part of your standard fertility program.

—Dr. Koski is an extension turfgrass specialist at Colorado State University's Department of Horticulture.

## LM REPORTS: IRRIGATION COMPONENTS

# Today's technology means savings on water and money

■ Why the interest in centralized irrigation? The reason is water—or, more precisely, the cost of water—which spouts ever higher as its availability evaporates with more frequent droughts.

Today's irrigation technology gives turf managers near-psychoic ability to forecast plant water requirements and compensate for dry spells. By combining weather stations with moisture sensors and irrigation controllers, the odds against over- or under-watering are minimized.

And you no longer need to have massive acreage to take advantage of the technology.

Stephen Smith, of Aqua Engineering in



MORE INFO, PAGES 30, 33

Ft. Collins, Colo., predicts even more site-specific irrigation controls and monitoring systems in the next two to three years. "Your imagination is the only hindrance," says Smith.

The money you can save is considerable. By coordinating evapotranspiration (ET) rates with centralized irrigation controls, Smith says the city of Pueblo, Colo., saved \$125,000 in water costs in one year, far exceeding its investment in central controls, data collection, a weather station and implementation. Smith calls it "a cost-effective way to approach large-scale landscape irrigation."

Dorothy Borland, water conservation analyst for Denver, Colo., parks and recreation, reports millions of gallons of water being saved by the city, thanks to a rain shut-off feature found in the best controllers.

—Terry McIver

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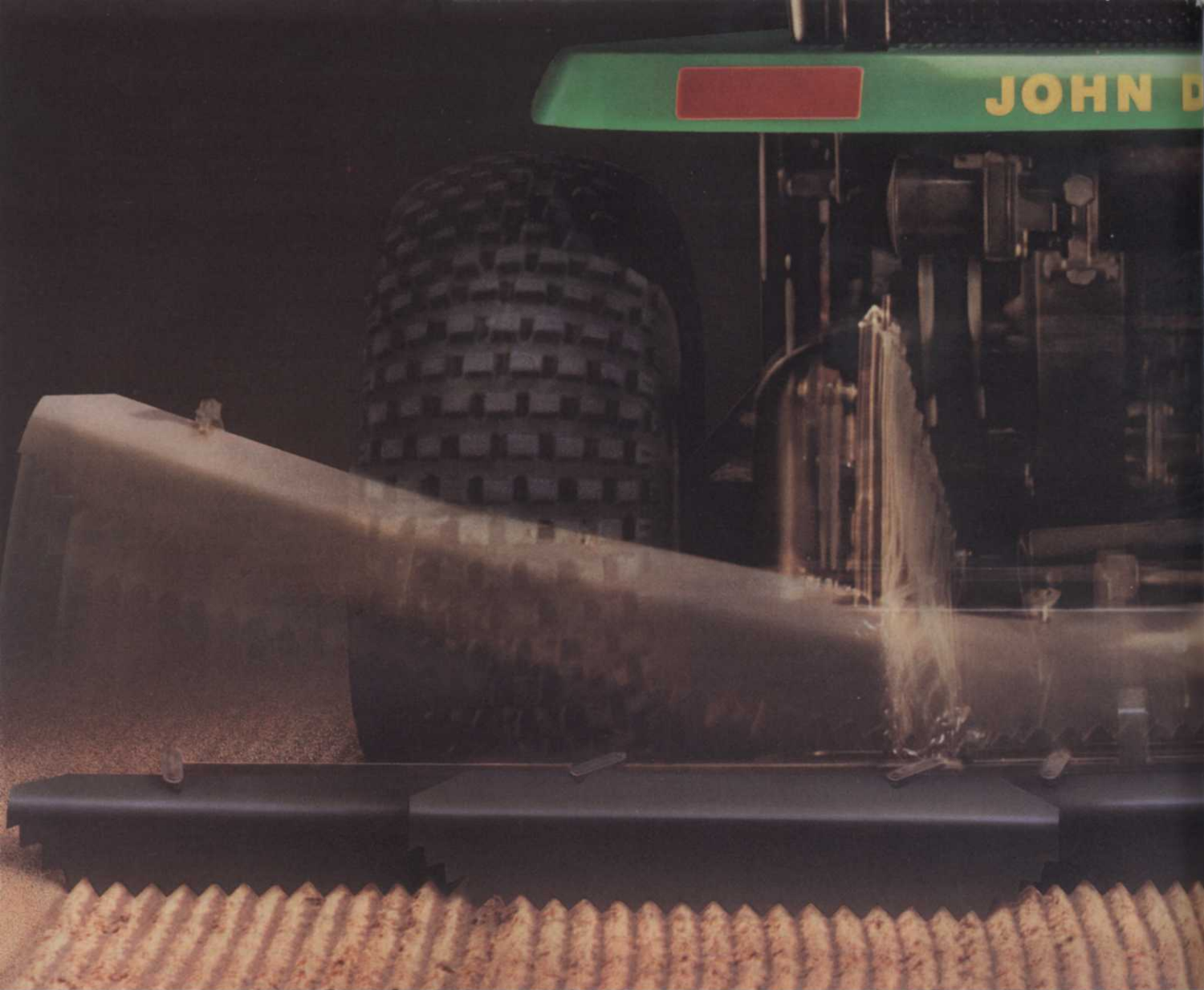
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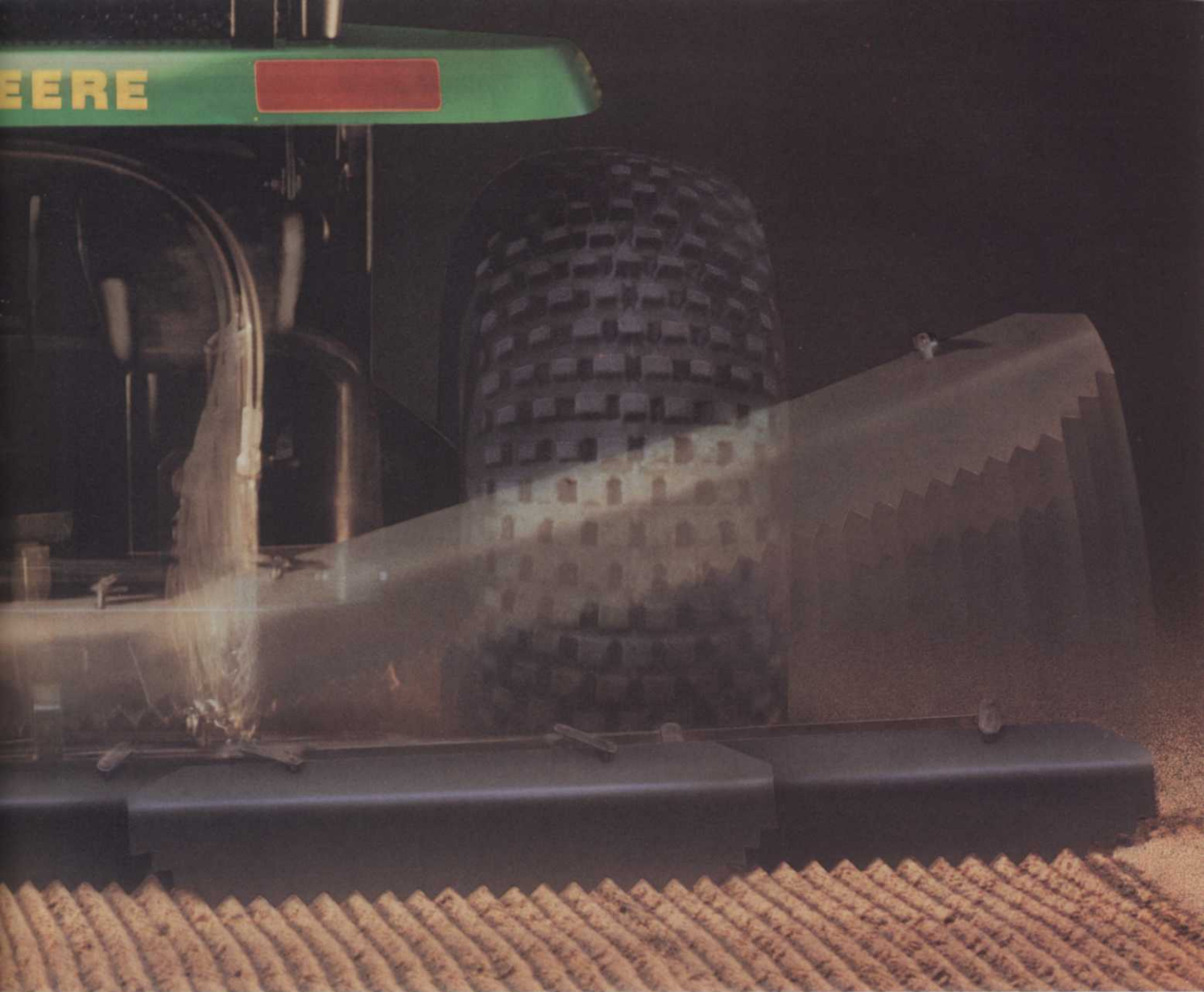
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bility, ease of operation and versatility, you won't find a better value than the John Deere 1200.

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The following is a listing of some of the companies marketing irrigation controllers and sprinklers obtained from literature on hand at LANDSCAPE MANAGEMENT offices at press time. Exclusion of any product or company is unintended. For a complete listing of irrigation product manufacturers, consult LM's 1991 September Buyers' Guide.

## CONTROLLERS

COMPANY	PRODUCT	FEATURES
<b>Buckner</b> Fresno, Calif. (209) 275-0500	C.O.P.S. Universal	Operate and monitor field controllers from a central computer using a radio interface. Can be used with new or existing field controller system. Any number of systems can operate up to 999 field units; each field unit runs up to 42 stations. Can retro-fit existing systems.
<b>Champion</b> Los Angeles, Calif. (213) 221-2108	Pro Series	Three start times per program; selectable seven day/skip day function; timer settings from one minute to 5 hours, 59 minutes; manual program start or manual station operation; independent dual programs; auto/off rain switch; solid state design; fuse protected circuitry; master valve/remote pump start circuit.
<b>Griswold Controls</b> Irvine, Calif. (714) 559-6000	GD Series	Automatic manual shutdown; rainy weather shutdown; drip irrigation control; master valve output; universal radio interface allows you to turn valves on and off from any location with standard transmitter; dual seven-day programs; 12 start and repeat hours; timing from 30-seconds to 30-minutes
<b>Hardie Irrigation</b> Carson City, Nev. (800) 634-8873	Total Control	Modular design; day clock/calendar for true odd/even day programming; three independent programs that can run concurrently; programmable rain-off to seven days; water budgeting feature. Self-diagnostic electronic circuit breaker with valve 'short' detector.
<b>Hydro-Electronics</b> Deer Park, N.Y. (516) 667-7852	Hydro-Saver Pro-Line	8-, 12- and 16-station dual program microprocessor controllers; 365-day built-in calendars for odd/even water restrictions and other complex watering schedules; dual programming; drip irrigation feature; up to three start times per day; flexible-zone timing; water budgeting feature.
<b>Motorola</b> Schaumburg, Ill. (708) 397-1000	MIR 5000	Independent programming of each station or sprinkler group; field satellites can perform up to eight independent irrigation functions simultaneously; central control operates several different types of sprinkler heads independently; field interface unit hooks up to most IBM PC-compatible computers.
<b>Rain Bird</b> Glendora, Calif. (818) 963-9311	Maxi System IV	"Cycle and Soak" feature saves water by automatically preventing the unwanted evaporation, flooding/pooling and run-off that occur when water is applied faster than it can be absorbed by the soil. ET-sensitive scheduling; communicates directly with optional on-site weather station
<b>Toro Irrigation</b> Riverside, Calif. (714) 688-9221	O.S.M.A.C. System	Designed in cooperation with Motorola; can run as a low-cost upgrade to existing system or as a complete control system for new golf installations. Expandable from eight to 48 stations; central or remote control; multi-valve syringe; alarm paging capability from key sensors monitoring flow, power, pumps.
<b>Weather-Matic</b> Garland, Texas	Lawn Mate	Nine volt standard alkaline battery automatically starts in event of power failures. Programs and clock time are uninterrupted for a week with the back-up system. Easy installation, thanks to removable lower panel, which allows access to field wiring terminal block. Two models are designed for seven and 12 stations.

*Continued on page 33*



## Steps to save resources

### Catalano: Establish irrigation system goals and make a thorough site evaluation.

resources credits 80 percent of its water savings to a properly operating irrigation system.

Catalano says a centralized irrigation system will typically pay for itself in six to 24 months.

"A number of quality computer-based central control irrigation management systems are available," says Catalano, "but the system will only be as good as the set-up. Proper set-up includes a thorough understanding of the site manager's goals and concerns, the abilities of the system being used, and a good field evaluation."

Catalano lists 10 steps to follow when planning and installing an irrigation controller:

#### 1. Determine system goals. Collect

the information needed to determine how much water needs to be dispersed per valve.

the information needed to determine how much water needs to be dispersed per valve.

**2. Evaluate the site.** Variables include precipitation rates, adjustment factors, drainage patterns, uniformity of application, soil structure and sun exposure.

**3. Conduct a hydraulic analysis.** After you've determined how much you can run through each valve, determine how many valves can operate at one time. Respond to high- or low-flow conditions caused by mechanical system failures, such as broken risers or stuck valves. "The work is in determining placement of the master valve, what flows are expected, and what the shut-off threshold will be," says Catalano. Sequence events in such a way that you optimize the energy used by the pump station and reduce water waste or damage from pressure surges.

**4. Input data to fit the system/quality control.** Take the information learned in the first three steps, and look for variables. "These are the triggers we pull to make the system respond the way we want it to," says Catalano. "As these sys-

tems all tend to rely heavily on the data entered, the quality control of the data entered is very important."

**5. Sequencing of events (or scheduling).** Once you've determined the hydraulic sequence, you then program valves for start and stop times.

**6. Simulate operations.** Literally a "dry run." Using data, project how the new system is likely to perform.

**7. Fine tune,** making corrections as needed.

**8. Operation.** A step-by-step review of the results.

**9. Training.** a.) to eliminate computer-phobia, which is easily done, thanks to user-friendly technology or after-hours courses; b.) to learn the system, the menus, the software; to know what the system can do. This type of training is usually provided by the manufacturer or distributor. The more you learn, the better you can design the system to respond to certain weather conditions.

**10. Monitor and adjust.** This is a constant. "Probably the biggest mistake you can make in using central control is thinking the irrigation is now 'taken care of' and you don't have to touch it again," warns Catalano. Adjustments have to be made as needed.

## SPRINKLERS

COMPANY	PRODUCT	FEATURES
<b>American Granby</b> Liverpool, N.Y. fax: (800) 729-3299	Harvard Turf-Flo	Ratchet design allows positive 360-degree positioning of riser/nozzle direction after installation without turning the entire pop-up body. Serviceable wiper seal; replaceable basket filler; stainless steel spring for positive retraction.
<b>Hit Products</b> Lindsay, Calif. (209) 562-5975	Various products	Proline pop-up sprinklers with nozzle adapters; Pro-Plug provides flushing of pop-up before nozzle installation; Santoprene wiper seal provides consistent self-flushing performance and minimum flow by.
<b>Hunter Industries</b> San Marcos, Calif. (619) 744-5240	PGP/I-40 sprinkler	PGP: a gear-driven sprinkler for turf and landscape applications. Available as a shrub model, 4-inch pop-up or 12-inch pop-up; 12 interchangeable nozzles; two-year exchange warranty The I-40 is a moderate-to high-capacity sprinkler for parks or other large turf areas. Five interchangeable nozzles; vandal-resistant; five-year exchange warranty.
<b>Rain Bird</b> Glendora, Calif. (818) 963-9311	R-50 series rotors	Now with adjustable bypass, making it simple to adjust water flow into the rotor, Permits fine tuning and allows the rotor to be adjusted for high performance in low pressure applications; full and part circle capability in each unit.
<b>Safe-T-Lawn</b> Miami, Fla. (305) 261-1589	Various products	Spray pop-ups, nozzles, and rotors. Ball Drive Rotor model is a low precipitation rate sprinkler; eliminates backsplash, allowing positioning close to buildings, driveways or streets. Rotates by the controlled drive of a stainless steel ball.
<b>Toro Irrigation</b> Riverside, Calif. (714) 688-9221	Super 700 Series	Shrub, commercial, lawn and hi-pop models, with eight interchangeable nozzles from 1.0 to 9.0 gpm; standard or custom imprinted debris covers.

# Athletic fields: why renovate?

## Experts from all over the country discuss how to prepare fields for summer play.

■ When spring rolls around many fine turf areas, particularly athletic fields, need renovation.

This is particularly true in 1992 because of extremely dry conditions in many parts of the country last growing season.

Dr. Charles Peacock of North Carolina State University recommends renovation where the site isn't acceptable but desired turfgrass nevertheless covers more than 60 percent of the playing field. (If turf cover is less than 60 percent, Peacock says re-establishment—destruction of the old field, complete site preparation and replanting—is a better alternative.)

Other reasons to renovate include:

- excessive thatch (greater than one inch thick)
- poor soil conditions (compaction, rock layers, buried foreign matter, etc.) or
- severe damage by traffic, diseases, insects, etc.

Peacock says to check thatch thickness and root density to determine how much vertical mowing can be done.

"The first step should be an examination of the root system by grabbing a handful of turf and trying to pull it out of the ground," Peacock says. "Sparse or shallow-rooted turf is easily pulled out of the soil. Vertical mowing poorly-rooted turf in a weakened condition is not advised."

**Turf wear**—According to Dr. Vic Gibeault of the University of California at Riverside, traffic causes soil compaction, soil displacement, turf wear tolerance and turf displacement. Any of these problems is also reason to renovate.

Turf wear, Gibeault says, is a "vertical crushing and horizontal displacement" influenced by turf species, cultural practices, environmental conditions and/or type and intensity of play.

The most wear-tolerant grasses are, says Gibeault (in order):

- 1) zoysiagrass,

- 2) common and hybrid bermuda-grasses,

- 3) turf-type tall fescue, and

- 4) Kentucky bluegrass.

Before renovating, determine which species is best-adapted to your situation.

**Renovation**—The steps in renovation, Peacock says, are:

- 1) Kill unwanted vegetation with either a selective or a non-selective herbicide.

- 2) Mow those trouble parts of the field as short as possible, taking into considera-

tion the type of grass.

- 3) Verticut to pull up thatch. If thatch is an extreme problem and the existing grass is healthy enough, you may want to verticut a second time at right angles to the first pass.

- 4) Vacuum or rake up the debris, and mow once more to smooth the surface.

- 5) Apply a thin layer of topdressing that is compatible with native soil.

- 6) Reseed or replant.

**Drainage problems**—Areas with drainage problems can either be re-graded or topdressed.

"When re-grading, establish a crown on the field's long axis and carefully grade to a 1 to 1-1/2 percent slope toward the sidelines" or foul lines, notes a University of

*continued on page 38*

## SAMPLE ATHLETIC FIELD FERTILIZER PROGRAM

For natural soil and modified soil fields where soil tests show minimal\* to adequate levels of phosphorus and potassium, or no soil test has been made.

Nitrogen source	Time of application			
	Late spring	Early summer	Late summer	Early fall
Pounds of N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O per acre applied				
50% or more of the N derived from a slowly available source	60-30-30		100-50-50	
or 25% to 49% of the N derived from a slowly available source	60-30-30		50-25-25	50-25-25
or water soluble N	40-20-20	30-15-15	50-25-25	40-20-20

\* Additional P<sub>2</sub>O<sub>5</sub> and/or K<sub>2</sub>O should be applied where soil test indicates need.

Source: Penn State University



Many athletic fields will require renovation due to last year's drought conditions.



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Sabre is often mixed with turf-type ryegrass, fine fescues and modern Kentucky bluegrass.

When used as a shade grass Sabre is sown at a rate of 2-3 pounds per 1000 square feet.

For Southern golf greens the recommended seeding rate is 12 pounds per 1000 square feet.

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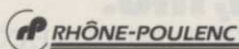


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phthora root rot and Pythium with powerful systemic action that puts long-lasting control inside roots and leaves. And CHIPCO® ALIETTE®, now available in a new, more convenient WDG formulation, provides two-way disease protection: First, by directly attacking disease organisms; and then, by helping plants build up their own defense mechanisms.



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most sensitive varieties. And now these two powerful disease-fighters can be tank-mixed to provide the ultimate in lasting, economical control. This year, keep the blush in your profit picture with the proven fungicide team from CHIPCO®. Available from your crop protection chemicals supplier today.

Minnesota extension pamphlet.

"Heavy topdressing in depressed areas and in the center of the field, with lighter applications along the sidelines, gradually gives the desired surface drainage."

Penn State University says that at least 80 percent of the topdressing sand be between 2.0 and 0.5 mm or between 1.0 and 0.25 mm.

**Aerification**—If hardness from compaction is a problem, consider aerifying.

"Simple aerifiers can be the best investment you can make," says Chip Toma of the Kansas City Royals. "The jury is still out on pulling cores, but as long as you can get air and water to the rootzone, you'll be doing some good."

Roger Moellendorf of the Green River (Mont.) Parks and Recreation Department, hires one person each summer whose job is strictly aerification. "All our fields get it at

least two times per month," Moellendorf says.

**Overseeding**—Though best done in late August or early September, you can overseed in early April in cool-season areas.

The Lawn Institute recommends a mixture of 50 to 75 percent Kentucky bluegrass and 25 to 50 percent creeping red fescue at a rate of 4 to 5 lbs./1000 sq. ft.

"Pre-germinate seed to give grass the fastest possible start," writes Dr. Eliot Roberts of the Lawn Institute. "Mix seed with expanded mica such as vermiculite (concrete aggregate grade) at a rate of 2 mica to 1 seed.

"Moisten the mica slightly, and mix in the seed. Then add water until mixture is thoroughly wet. Cover with a plastic tarp and keep moist for 7 to 9 days with temperature held at about 70° F.

"When most of the seed has started to germinate, mix with a processed sewerage

sludge fertilizer until dry enough to spread. Calibrate the spreader for the proper rate and sow promptly. After seeding, water the field immediately and keep moist."

**Fertilization**—"Recovery is more rapid if turf is properly fertilized immediately," Peacock notes.

Test the soil to determine fertilizer needs. "In lieu of a soil test," Peacock adds, "a 16-4-8 fertilizer with micro-nutrients is suggested, at a rate which will provide 1 lb. of soluble nitrogen per 1000 sq. ft."

Also, if soil pH needs correcting, lime should be spread and worked into the soil profile during cultivation.

**A final tip**—Do not use pre-emergence herbicides immediately following re-planting. This may inhibit root formation. "Weeds are better handled with a post-emergent after the first mowing," Peacock concludes.

—Jerry Roche

## Don't underestimate worth of hand sprayers

■ It's difficult to imagine professional lawn and landscape service without small compression sprayers. Yet the hand sprayer is often given too little regard by professional users.

It's dumped into the back of service vehicles, sometimes dropped and, every once in a while, inadvertently drop-kicked. Then the user scratches his or her head when the unit leaks. Or when the sprayer hose clogs.

Slowly, that's changing. Appreciation for the compression sprayer grows as the green industry moves to spot/target applications of materials. Pump-up sprayers are well suited for many of these uses.

Gene Short, sales manager for Green Garde/Division of H.D. Hudson Manufacturing in Chicago, offers these suggestions for choosing, and safely using compression sprayers:

- Professional applicators should use professional sprayers. "What's worse than showing up on somebody's lawn with a sprayer in your hands just like the one hanging in the customer's garage?" observes Short.

- Polyethylene is a good material for a lawn/landscape sprayer, says Short. It's lightweight and corrosion resistant. Short prefers stainless steel nozzles, although brass nozzles are dependable and long-lasting too.

- Look for a sprayer with a removable spray hose. If it becomes clogged, it'll be easier to unclog. The hose should be PVC graded.

- Purchase a sprayer with a funnel top. It's easier to fill without spilling material.

- Wear appropriate safety gear—gloves, boots, goggles—when filling the sprayer, particularly when handling concentrated pesticides.

Continued on page 40

## SPRAYER MAINTENANCE

Liquid leaks from spray control valve

Clean V ring sealing surfaces or replace V ring.

Air leaks where pump seals at tank

Clean gasket sealing surfaces or replace gasket.

Air leaks at hose connection

Be sure connection is tight. If O rings are used, clean sealing surfaces or replace O rings; re-attach hose.

Control valve doesn't shut off

Clean O ring sealing surfaces or replace O ring.

Plunger doesn't pressurize tank

Lubricate plunger cup with petroleum jelly (not oil) or replace plunger cup.

Liquid leaks at nozzle

Clean O ring sealing surfaces or replace O ring.

Liquid or air enters pump cylinder

Clean check valve sealing surface or replace check valve.

Sprayer doesn't spray

Check nozzle, control valve, and the rest of discharge line for clogging.

### PREVENTIVE MAINTENANCE

1. Clean tank and flush out discharge line after every use.
2. Keep inside of tank dry when not using. Store upside down with pump removed.
3. Apply petroleum jelly (not oil) to plunger cup once a year, more often if necessary.
4. Occasionally oil spray control valve, plunger rod, and nozzle threads on cap.

Source: H. D. Hudson Co.

# Turfcats' 4WD redefines upward mobility.

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- On-demand 4WD system with differential lock delivers hill climbing power with less scuffing.
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The 4WD Turfcats T422D climbs steep hills\* with just a flip of a switch. For better side hill traction, a step on a pedal engages the differential lock.

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

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

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**Short: professional applicators use professional equipment.**

- Pour in the pesticide first when filling the sprayer, then the water. This will help prevent foaming.

- Don't fill sprayers to the top. If you're using a two-gallon sprayer, make only 1-1/2 gallons of material. The unit needs some air to be pumped up properly.

- Keep your face away from openings or valves when pumping up your sprayer.

- Use either a pressure regulator or a pressure gauge on your compression sprayers when possible. Either accessory gives the user more control over pressure. Pressure and nozzle selection, for the most part, determine flow rate and spray pattern.

- If in doubt, calibrate. A properly calibrated sprayer allows the most efficient and effective applications.

- Keep an extra service kit on hand for each sprayer you use. Keep it in the glove box of your service vehicle. It only takes about 10 minutes to repair a sprayer, even in the field.

- Use a soft brush and soapy water to clean your sprayer periodically.

The heart of Short's message: buy a quality unit. Use and maintain it properly, and it will last many, many years.

"If you go out and buy a new sprayer every year for \$25 or \$30, you're spending a whole lot more money than if you went out and bought one good sprayer that will last for five or 10 years," he says.

—Ron Hall

## Calibrating a hand sprayer

■ Here's an accepted way to calibrate a single-nozzle hand sprayer.

Find a walking rate that is comfortable for you. Hold the nozzle tip at a distance above the surface to be sprayed that is both comfortable and within the recommended range of the nozzle, generally about 18 inches. (You might want to tie one end of an 18-inch piece of string to the nozzle and a small weight to the other end.)

**Step 1:** Measure an area 10 by 25 feet (250 sq. ft.) for the test area.

**Step 2:** Fill the sprayer to a level that's easily recognized. Be sure there's enough water in the tank to cover the test area.

**Step 3:** Pump the sprayer up to a sufficient pressure that provides an optimum spray pattern.

**Step 4:** Spray the pre-measured area. Walk at a constant rate and hold the nozzle tip at the same height over the entire test area. (Do not move the wand back and forth. Hold it in one position.)

**Step 5:** Refill the tank to the original water level. Note the exact amount of liquid needed to refill the tank. That amount is the volume per 250 sq. ft.

**Step 6:** Depending on label recommendations; 1) multiply the volume for

250 sq. ft. by 4 to get the volume per 1000 sq. ft., or 2) multiply the volume for 250 sq. ft. by 175 to get the volume per acre.

**Step 7:** Check the label for restrictions on minimum volume applied per 1000 sq. ft. or per acre. Frequently, pesticide labels explicitly state that the pesticide must be applied with a given number of gallons of water. If the sprayer delivers more water per area than needed, walk at faster rate or change to a nozzle tip with a smaller orifice. If the sprayer delivers less water than needed, walk at a slower rate or change to a nozzle tip with a larger orifice. In either case, repeat Steps 2 through 6.

**Step 8:** Determine the amount of pesticide needed for each gallon of spray and the amount needed per tankful. Add this amount to the spray tank and then fill with water. Begin application.

**Step 9:** Frequently stop and pump up your sprayer to insure uniform discharge.

This information was supplied by the Pesticide Applicator Training Office at Purdue University, West Lafayette, Ind.

—R.H.

## Recruiting, hiring, tricks of the trade

**'If you've got people, you can do just about anything,' says an expert on personnel.**

■ What does a bad employee "cost" your business? \$10,000? \$30,000? \$100,000?

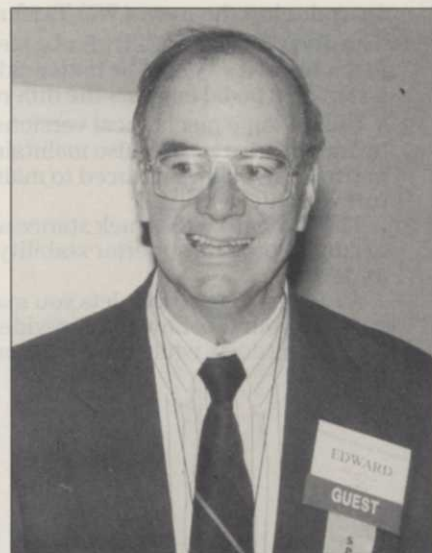
Edward Ryan of MPR Inc., Chicago, Ill., claims a bad employee costs a business three times his or her annual salary. These costs include salary, benefits, recruitment,

training, loss of productivity, loss of company morale, loss of business, his or her manager's time and energy, and damaged equipment.

"The rule of thumb should be: hire slowly, fire quickly. We more often do it the other way around," Ryan contends.

The most important element of the equation is to take your time and hire the right people. "The Japanese gather information on their employee prospects for 150 hours before hiring them," Ryan points out. "That's a courtship. It's a marriage.

"We have to spend more time up front.



**Edward Ryan: start a talent file.**

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Pennington is a national company with locations throughout the United States, so we understand that the grass that does well in Georgia won't survive a Minnesota winter. And the turf that's ideal for a fairway won't do at all for a green. Different circumstances call for different grasses. That's why we offer so many kinds and varieties. Each one is developed to meet specific conditions.

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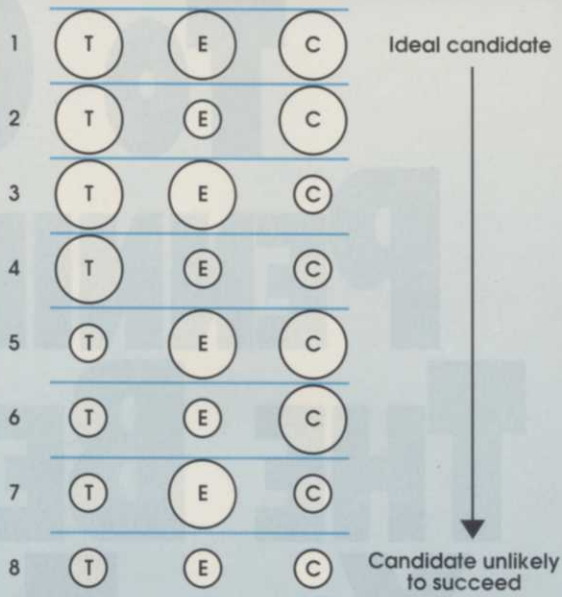


## TALENT INTERVIEW SCORE CARD

Behavioral traits	Questions: + evidence ? no evid.; 0 counter	Additional information and observations	Concerns
1 Ego/achievement drive • Recognition & independence • "My campaign was chosen"			
2 Technical mastery • Enjoys creativity • Stays current in field • Explores new approaches			
3 Discerner • Sorts well • Grasps essential points • Good judgement, appropriate			
4 Innovator • Visualizes the possibilities • Sees new frames of reference • Picks up linkages			
5 Intensity • Works long hours • Meets deadlines • "Whatever it takes"			
6 Strategist • Grasps strategic directions • Coordinates steps & details			
7 Persuader • Listens well • Convinces customer of benefits/advantages			
8 Communicator • Skilled presenter • Talks and listens with "real world" perspective			
9 Relator • Friendly • Values personal relationships			
10 Assertor • Straightforward • "Driven"			
11 Values • Honesty • Ethics			

Source: MPR Co.

## THE THREE DIMENSIONS OF COMPETENCY



T = TALENT - Behaviors required to get the job done.  
 E = EXPERIENCE - Job-related experience, education, and training that contributed to earlier productivity.  
 C = CHEMISTRY - Personality that fits into company and work group.

● = STRENGTH      ○ = WEAKNESS

Source: MPR Co.

It's too costly not to."

His keys to staffing with the best possible employees is to (1) know what is the best (specifying the position); (2) discover where to find the best (sourcing); (3) learn how to determine the best (interviewing); and (4) use the profile of the best to evaluate employees (assessing).

"We've got to focus more on behavior," he says. "You get hired for what you know; you get fired for who you are—and that's wrong."

Here are some key factors which may or may not enter into your hiring decision:

- Start a talent file of people you meet. Good managers are always, always recruiting. They never stop, even if they're downsizing. Once you increase applicant flow, you can and will get more selective. "Seventy percent of all employees should come from referrals," says Ryan. "Work the networking to death."

- "Street smarts" is essential. The person you hire must be pragmatic.

- Women make better hiring decisions than men, so don't be afraid to ask a female for her opinion.

- Define the traits you're looking for, ask questions, observe, and note your concerns.

- Never interpret a question for interviewees. Let them interpret it themselves.

The three main ingredients to a good employee are behavior, experience and how the individual fits into the organization. Each employee prospect should be graded in these three areas (see Chart 1).

The personal interview is of utmost importance. It should be structured and use zero-based evaluation in a variety of categories, depending on the type person you're looking for (see Chart 2).

"More often than not, the interviewer talks more than the interviewee," Ryan points out. "From now until the moment you die, when you ask questions, ask for an example. The more specific and recent

the answer is, the more the behavior is practiced."

Ryan also suggests to tape every job interview—with permission. The best tack to use is to tell the interviewee that the tape will be erased as soon as the position is filled. "You'll be a better interviewee and you'll hear a lot of fresh material," Ryan contends."

Finally, remember that many talented, successful people don't meet society's definition of a "normal, well-adjusted person." In particular, MPR points out, if the position requires that a person be exceptionally "driven" in order to be successful, you should be prepared to accept behaviors that might not match your expectations of "normal behavior."

—Jerry Roche

—For more information on what MPR Inc. can do for your business, call Ed, Julie, Dennis or Sarah in Chicago, Ill. at (800) 888-1976.



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# Can information blitz keep 'anti's' at bay?

■ Here's a blueprint for starting a pesticide controversy in a community, any community.

1. **Inspire** a single person, then a small group of people to express concerns about the health, safety or environmental aspects of pesticide use.

2. **Ignore** and/or antagonize this group so that it becomes vocal enough to attract the attention of a larger audience.

3. **Argue** the controversy long enough to whet the interest of the media.

4. **Add** fuel to the issue, raising it to the level of public debate.

5. **Avoid** compromises so that the controversy lands on the doorstep of lawmakers—local, state or federal.

Now that ChemLawn Services Corp. has identified the life cycle of a typical community pesticide controversy—astounding how similarly they unfold—the company's management is more confi-

dent it can address them.

And the number one way it addresses them is with information.

Deb Strohmaier, ChemLawn's chief public relations specialist, told an audience of about 200 turf professionals at the Ohio Turfgrass Conference this past December that the nation's largest lawn care provider is continually increasing and upgrading the information it provides its customers.

Brochures, videos, fact sheets—your name it, ChemLawn can provide it.

"We have a positive story to tell on the issues and we've made it easy for our employees to tell it," says Strohmaier who's been with the company for five years.

Strohmaier made these further observations specifically about dealing with the media:

● Recognize that most reporters and editors probably know little about chem-

istry.

● Recognize that they're working under a deadline.

● What's the background of the reporter seeking your comments? What's his angle?

● If an interview is being arranged, it's to your benefit to find out in advance what the reporter wants to cover.

● If you can—and want to—answer specific questions, be truthful. Never lie.

● Don't guess or speculate about answers. Offer to find out.

● Avoid saying "no comment." It's much better to say, "I can't comment on that just yet."

● Present your point but don't argue or debate with the interviewer.

● Know when to duck and get out of the way. If the story is bigger than you, refer your interrogator to your business association.

"In years past ChemLawn did find itself speaking for the industry and we became the magnet for controversy. We've since discontinued the practice of commenting on generic stories," says Strohmaier.

# Smart billing KOs cash flow crunches

by Ed Wandtke

■ Lawn care and landscape company owners often say, "If I can make it through the first quarter, I'll be all right with cash flow."

There are ways, however, to minimize—or possibly eliminate—your cash crunch.

1) **Convert your current budget to a cash flow budget**, detailing when all monthly expenses and income will occur. Planning the year this way will help you better forecast major purchases. In addition, the cash flow budget will show you when cash will be tight. Confer with your accountant the first time through; he or she should be able to thoroughly explain this cash management tool to you.

When you apply for the line of credit, make sure that you and your accountant do a thorough job of explaining the cyclical nature of your lawn service business. By doing this, you stand a much better chance at receiving the line of credit you

are applying for.

2) **Offer a five percent discount for pre-payment.** A discount of five percent is typically enough to get five to 15 percent of your current customers to pre-pay. Some firms approach this method of generating cash flow more aggressively, and have an astounding 40 percent of customers prepaid by December 31.

3) **Billing at the beginning of the month** can accelerate your collection period by as much as 30 days.

The "on-time" customer always pays his bill within 30 days. The "past-time" customer pays within 60 days. For March application, look at how the billing could effect cash flow:

Bill March 1: Collect customer on-time March 30  
Collect customer past-time April 30

Bill March 30: Collect customer on-time April 30  
Collect customer past-time May 30

4) **Bill commercial accounts monthly** to guarantee certain cash flows each month. Some companies have even set up a program with their residential customers in which they offer monthly billing instead of five or six larger payments. Both of these methods can be implemented on a very cost efficient basis.

5) **Send customer statements on the 15th and the 30th of application month.** Reminding your customers often of the need to pay on time will assist in more of paying as soon as the bill is left or mailed to them.

Don't abuse your customer by calling for a payment two days after you have rendered an invoice for the prior 30 days. If you need to do this for cash, review the suggestion above as to a better collection system for these type of customers.

When you buy a new vehicle or other piece of equipment, do you take a 12 payment per year plan? Why take a 12 payment per year plan when cash is coming in for only eight to nine months of the year? Ask the financier next time if you could pay for this purchase on an eight-month schedule. This will help prevent you from paying out money when none is coming in. Remember it can never hurt to ask, because often the financier is happy to

*continued on page 48*

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When it comes to engine size, Toro gives you the power of choice. The new Groundsmaster 220-D features a 20 hp liquid-cooled, 3-cylinder Mitsubishi diesel engine. The new Groundsmaster 224 gives you the same engine in a gas model, providing you with the durability diesels are known for, but with more power. Both give you all the speed and power needed for the most demanding jobs.

The Groundsmaster 220 also is available with a 20 hp air-cooled gas engine.



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With all these performance features, it's obvious why the new Groundsmaster 220-D and 224 are so popular. And why Toro is the leader in out-front riding rotary mowers. To request a demonstration, call your local Toro distributor or contact Toro at the address below.

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**6) Slow down your first quarter payments.** Many purchases are made during the first quarter, but the payment for these purchases can be scheduled for the second and third month of the second quarter. Suppliers will work with you when you negotiate these payments in advance,

rather than after you have purchased the items. Often, the interest a supplier charges for extending payments is slightly higher than the interest a bank would charge, but you do not use your line of credit up at the bank when you can negotiate this type of payment plan.

Ask for a deferred or extended payment

terms, and you will be surprised how accommodating some of your suppliers can be. Prior payment performance will be the basis upon which a supplier will decide if they are willing to carry your bill for a deferred payment system.

—The author is a senior consultant with PC Systems, Inc., Columbus, Ohio.

## Snow thrower safety: don't put your hands where you shouldn't

■ The biggest chance you have of injuring yourself while operating a snow thrower is by putting your hands where you shouldn't.

More than 4,000 people require emergency room treatment every winter because of injuries from snow thrower-related accidents, reports the Consumer Products Safety Commission. These injuries are usually to the fingers, hands and arms.

George R. Thompson, III, director of corporate communications for Briggs & Stratton Corporation, offers these snow thrower safety tips:

- Stop the engine before attempting to

unclog the machine.

- Use a wooden block to clear a clogged passage. "Even if the snow thrower is turned off, operators must make sure all moving parts have completely stopped before they attempt to unclog the machine," says Thompson.

- Read and understand all operating instructions.

- Don't touch hot mufflers, cylinders or fins.

- Don't fill the gasoline tank while the engine is running. Allow the engine to cool before adding fuel.



- If gasoline is spilled, move the machine away from the area of the spill and avoid creating any source of ignition.

- Don't wear loose clothing that could be caught in moving parts of the equipment.

## The marketing plan

**As the Cheshire Cat told Alice, it doesn't matter what road you take if you don't know where you want to go.**

by Rudd McGary, Ph.D.

■ A big misconception in many green industry companies is that advertising equals marketing. But advertising is only one part of the marketing matrix.

The idea that advertising can make up for other marketing inadequacies is a fallacy. When several companies I know severely curtailed or eliminated their advertising for a whole year, the overall effect was actually *positive*. They saved money on advertising and, in addition, attracted new

customers through other means.

Marketing plans usually take at least a year to fall into place, since they contain many parts. Impatient management is the greatest impediment to a marketing plan's success.

Here are some key elements to a successful marketing plan:

**1) The consumer**—What does the customer want to buy? How much will they pay for it? How are you going to determine this information?

One of the factors in planning is that not everyone buys lawn care, nor tree work, nor design/build services, nor irrigation. Each segment of the population buys different services in different ways.

Ask the consumer what he/she wants. It's always best to ask in person, second-best to ask by phone, and third to ask by mail.

**2) Control**—If you're going to spend money in advertising/promotion, you should have a way of determining whether

or not you get a return on the money you've invested.

**3) Sales staff and management**—You need to understand what the sales force is to do, how it is to be managed, and how the rest of the marketing activities fit in with the sales force actions.

**4) Mix of services**—Have a clear focus. I've worked with many companies that have branched into areas that don't exactly fit into their original mission. The classic line is that "we went into (fill in the blank) because we had someone who could do it." Make sure your customers want it first.

**5) Outside influences**—How will reports on 2,4-D affect the lawn care business? What will a down economy do to the buying patterns for services? Regulatory, economic and environmental issues are as important a part of planning considerations as any of the internal issues.

**6) Owner needs**—What is satisfying to the owners of the company? For instance, in a small company, the owner is probably also working; in a publicly-held company, there may be thousands of owners peering

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over management's back.

After getting the proper input from everyone required, you need to determine the company's strengths and weaknesses from financial, marketing, operational and management viewpoints.

The next step is to look at both long-term and short-term objectives. Short-term objectives should change depending

on how the long-term objectives are framed, and *not* vice versa.

The planning at this point takes into account information on the consumers, the company and overall objectives. These are examined at the same time, not sequentially.

The next part of planning is to determine accountability. If no one is responsible for either the plan or its final outcome,

there isn't much chance it'll work.

The final cog is to work out some sort of contingency plans. Obviously, it's impossible to foresee all the variables that can occur during the year. If the plan is not working, there must be an alternative. Failure to understand when the plan is going poorly is often a major problem in the planning process.

## 'Critical heights' of playground tested materials

■ Natural and artificial turf are not recommended by the Consumer Product Safety Commission (CPSC) for surfacing public playgrounds "because their effectiveness in absorbing shock during a fall can be reduced considerably due to wear and environmental conditions."

According to a CPSC pamphlet entitled "Handbook for Public Playground Safety," unitary and loose-fill materials are better suited than grass.

Unitary materials are generally rubber mats or a combination of rubber-like materials held in place by a binder that may be poured in place and cures to form a unitary shock-absorbing surface.

Loose-fill materials include sand, gravel and shredded wood products. The table lists the critical height—maximum height

from which a child can safely fall—for each of seven materials tested by the CPSC. (For example, if uncompressed wood mulch is used at a minimum depth of six inches, the critical height is 7 feet.)

The depth of any loose fill material could be reduced during use, which would result in different shock-absorbing properties. For this reason, a margin of safety should be considered in selecting type and depth of materials, the CPSC warns.

### CRITICAL HEIGHT OF TESTED MATERIALS

Material	Uncompressed to:			Compressed to:
	6"	9"	12"	9"
Wood mulch	7'	10'	11'	10'
Double shredded bark mulch	6'	10'	11'	7'
Uniform wood chips	6'	7'	>12'	6'
Fine sand	5'	5'	9'	5'
Coarse sand	5'	5'	6'	4'
Fine gravel	6'	7'	10'	6'
Medium gravel	5'	5'	6'	5'

Source: CPSC

—Landscape Structures Inc. is offering free reprints of "Handbook for Public Playground Safety." To get yours, write 601 Seventh St. South, Delano, MN 55328; or phone (800) 328-0035.

## Selecting plants: a backwards method

■ If plants have not been specified in a landscape design, here is a "backwards" process for selecting them, as suggested by Bonnie Lee Appleton of the Virginia Hampton Roads Ag Experiment Station:

1) Decide generically what type of plant is needed: a tree, a shrub, vines, a ground-cover; deciduous or evergreen.

2) Decide what plant characteristics (time of flowering, fruit, fall color, bark or branch patterns) you want. She suggests to aim for multi-seasonal interest.

3) Decide—realistically—how large a plant can grow in its intended landscape

site. Consider height and spread, and growth rate.

4) Decide the degree of maintenance (pest control, pruning, fertilizing, etc.) desired.

5) List the existing landscape site conditions, to include:

- soil: type; pH; moisture content
- exposure: full or partial sun or shade; direction and amount of wind
- available moisture: precipitation and irrigation
- temperature tolerance: both winter and summer.

6) Use plant reference guides to select a

specific plant of the desired type with the desired characteristics and level of maintenance.

7) Shop for plants that are labeled as to type; healthy looking; free of insects, diseases, mechanical damage and well-cared for.

8) Look for a few specific things based on the way the nursery produces the plants:

● bare-root: adequate number of roots, roots not dried out

● balled and burlapped: tight rootball, no weeds, rootball not dried out, rootball well wrapped and/or laced

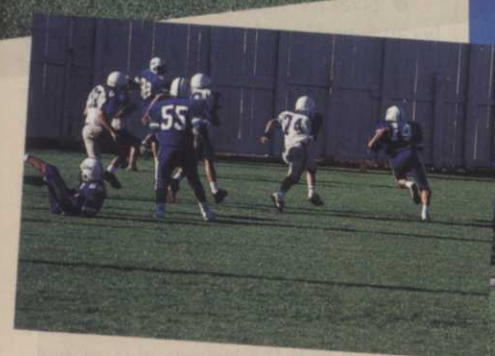
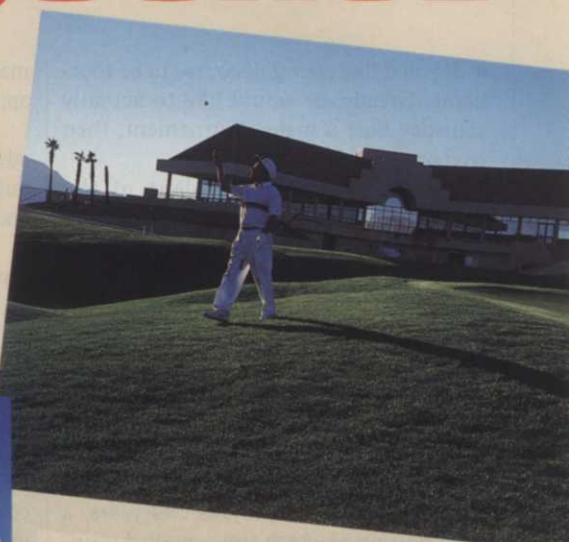
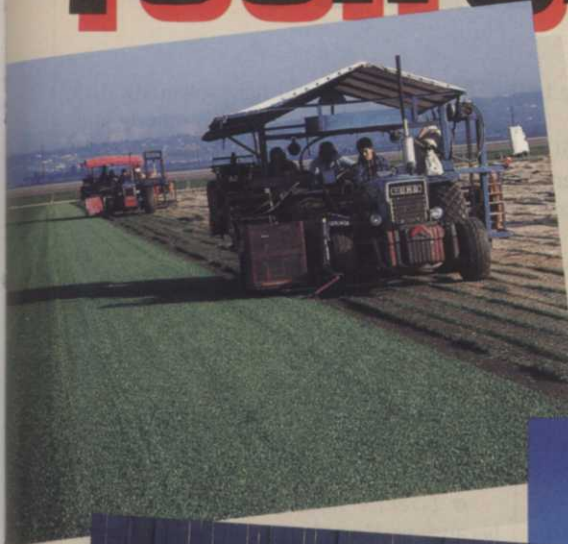
● container-grown: adequate number of roots on outside of rootball; no major circling roots; no weeds; not dried out

● containerized/process balled: adequately rooted into the medium packed around the roots; not dried out.



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# Tournament conditions are tough to meet

■ If you'd like your golf course to be tournament-ready, or would like to actually someday host a major tournament, then read on.

Ed Walsh, superintendent of the Ridgewood Country Club, Paramus, New Jersey, hosted the 1990 U.S. Senior's Open, and learned first-hand what sort of course conditions the USGA requires for tournament play.

Ridgewood—which is featured on this month's cover—was chosen to host the tournament nine months after the course was offered to USGA officials.

Tournament preparation took Walsh and his 15 extra employees two years, a great portion of which time entailed training for new crew members, bunker renovation and intensified maintenance.

Do members of private clubs welcome tournaments?

"They do, in almost every instance I'm aware of," says Walsh, "but they have to be sold on the idea. In most cases, I think the decision is made by the board of directors, with input from membership or it's put to a membership vote. There's so much responsibility, so much of the golf course is going to be changed relative to the people on the course. (Members) should be

made aware, and have an opportunity to approve or disapprove."

Tim Moraghan, a member of the USGA advance team, reminds that tournaments put an inordinate strain on a golf course, and the people who work it

"There's a big misconception that you can maintain these conditions year round," says Moraghan. "I try to tell people that we're peaking for one week in June. When it's over, the club cannot maintain that level of intensity throughout the year."

Moraghan says a prospective host city must first meet logistical requirements before the USGA even agrees to visit the course. Those include: office space; parking; room for gallery seating; nearby airport facilities and adequate hotel accommodations; communications and first aid.

If these requirements all pass muster, the USGA then will walk the course.

● Tee areas must be roomy, on firm and stable ground and point toward the prime landing zone.

Moraghan says the USGA puts a premium on driving accuracy.

"We don't want to have a player hit it anywhere and be able to wedge it back towards the green, if he's hit it 50 yards left or right."

● Bunkers should have adequate turf around the perimeter, drain properly and be free of rocks or other debris; neither too deep or too shallow;

● Roughs should be at least 20 yards from the edge of the fairway, and of adequate density and uniform height. Moraghan advises that roughs should allow a half-shot penalty; "you don't want to embarrass the player and have him need to hit the ball 50 yards to the side to get it back into play. You want to give him the opportunity to advance the ball about 100 to 150 yards."

● Greens must be firm and fast, because as Moraghan says, "putting is 50 percent of the game." Moraghan adds that the USGA selects green speeds based on: 1.) the event being played; 2.) green contours; and 3.) turf type.

According to Moraghan, extremely fast greens for a junior amateur or senior women's amateur would not be sporting.

Contours must be reasonable and can't resemble your local putt-putt.

It's in the category of turf speed that Moraghan says the average club management tries to emulate U.S. Open conditions. It's Moraghan's philosophy that "slow grass is better than no grass or fast dirt.

"I think an 8-1/2-foot (stimp meter reading) is ideal," says Moraghan. "I would rather play a club that has 8 to 8 1/2-foot (green speed) and has turf on it."

Moraghan also advocates lightweight mowing.

"Lightweight mowing and clipping removal helps in *Poa annua* reduction and eliminates compaction," advises Moraghan. "We want to encourage bentgrass, which in turn decreases water use because bentgrass uses less water."

Moraghan recommends hand-raking of bunkers during tournaments, and rotary mowers in roughs for heights above 2-1/2 inches.

Use a turf groomer to achieve faster green speed without a lower cut, but only in spring or fall, when bentgrass is growing well and the weather and soil temperature promotes good growth without heat stress.



Ridgewood Country Club's 4-West.

—Terry McIver

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## Pre-emergence weed control

by W.M. Lewis, Ph.D.

■ Pre-emergence herbicides are just part of an integrated turfgrass weed management program.

A successful program begins with cultural practices: proper mowing height and frequency, amount and frequency of fertilization, needed irrigation, and insect and disease control.

**What's available**—Pre-emergence herbicides are primarily applied in the spring for controlling smooth and large crabgrass and goosegrass. Many, however, will control other summer annual weedy grasses such as foxtails, barnyardgrass, crowsfoot and fall panicum. They also provide pre-emergence control of annual bluegrass when applied in the fall or spring, depending on location.

Several herbicides or herbicide combinations are registered for pre-emergence application in well-established grasses (Table 1). Grassy weeds are the target weeds for all, except isoxaben (Gallery).

Many herbicides are formulated on fertilizer carriers.

Some herbicides are limited to use by certified pesticide applicators.

Oxadiazon (Ronstar) is not registered for use on home lawns.

**Herbicide selection**—Know turfgrass tolerance for cool-season grasses (Table 2) or warm-season grasses (Table 3), and the grassy weeds expected on the site. Then check herbicide effectiveness on those weeds (Table 4).

Method or ease of application, granular or spray, safety and cost may also influence the choice.

Perhaps one overlooked factor in selecting a herbicide is the tolerance of trees and ornamentals. Most labels list tol-

*continued on page 60*

TABLE 1

### EXAMPLES OF COMMON AND TRADE NAMES OF PRE-EMERGENCE HERBICIDES

Common name	Company	Trade name and formulation
Atrazine	Ciba-Geigy Security	AAtrex 80W, 4L, 90DG Purge II 2L
Benefin	DowElanco Lesco	Balan 2.5G, 60DF 2.5 Benefin Granular
Benefin + oryzalin	DowElanco	XL 2G
Benefin + trifluralin	DowElanco	Team 2G
Bensulide	ICI Lesco PBI/Gordon	Betasan 4E LF, 3.6G, 7G, 12.5G Lescosan 4E, 7G Bensumec 4LF
Bensulide + oxadiazon	Scotts	Goosegrass/Crabgrass Control 6.5G
Dithiopyr	Monsanto	Dimension 1EC
DCPA	ISK Biotech	Dacthal 75W, 6F
Isoxaben	DowElanco	Gallery 75DF
Metolachlor	Ciba-Geigy	Pennant 7.8E
Napropamide	ICI Lesco	Devrinol 50WP, 2G, 5G Devrinol 5G Ornamental
Oryzalin	DowElanco	Surflan 4AS
Oxadiazon	Rhone-Poulenc	Chipco Ronstar 2G, 50WP
Oxadiazon + benefin	Regal	Regalstar 1.5G
Pendimethalin	Lesco Scotts	Pre-M 60DG Halts 1.71G Southern Weedgrass Control 2.45G Turf Weedgrass Control 1.71G Weedgrass Control 60WP
Siduron	Du Pont	Tupersan 50W
Simazine	Ciba-Geigy	Princep 80W, 4L, 90DG, 4G

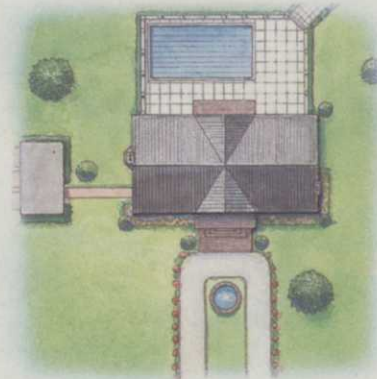
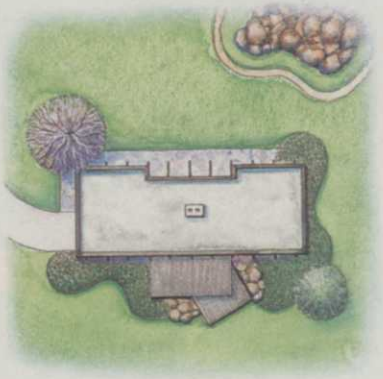
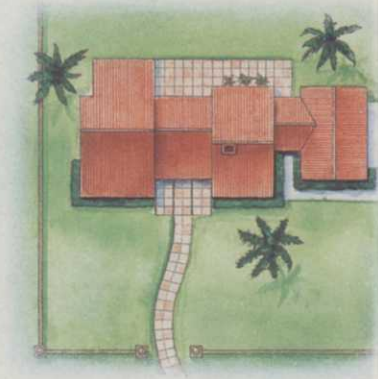
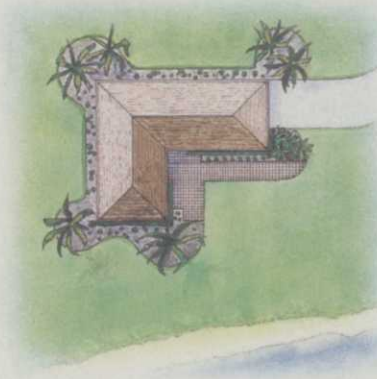
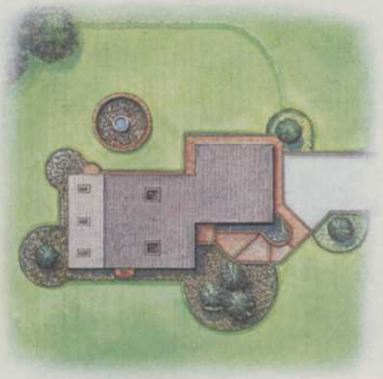
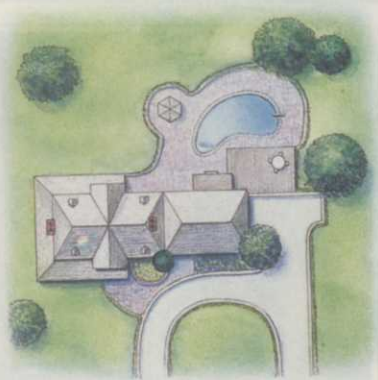
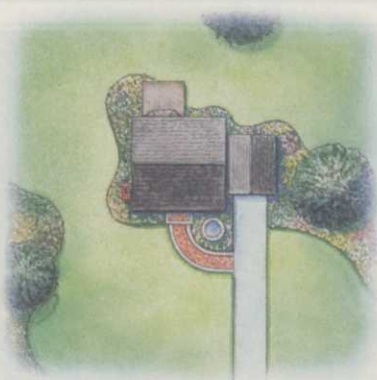
AS = aqueous suspension, DF = dry flowable granule, DG = dispersible granule, E or EC = emulsifiable concentrate, F = flowable, G = granular, SL = soluble liquid, W or WP = wettable powder. Check tolerance tables and product labels for tolerance of specific turfgrasses. Several of the above herbicides are formulated on a fertilizer carrier. These products are not included in the listing.

Source for all tables: Dr. Lewis

#### ELSEWHERE

**Potassium  
and grass,  
p. 64**

**On Poa  
trivialis,  
p. 68**



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TABLE 2

## TOLERANCE OF ESTABLISHED COOL-SEASON TURFGRASSES TO PRE-EMERGENCE HERBICIDES

Herbicide	Kentucky Bluegrass	Tall Fescue	Fine Fescue	Perennial Ryegrass
Benefin	T	T	M	T
Benefin + oryzalin	NR	T	NR	NR
Benefin + trifluralin	T	T	M	T
Bensulide	T	T	T	T
Bensulide + oxadiazon	T	T	NR	T
DCPA	T	T	M	T
Dithiopyr	T	T	T-M*	T
Napropamide	NR	T	T	NR
Oryzalin	NR	T	NR	NR
Oxadiazon	T	T	NR	T
Pendimethalin	T	T	T	T
Siduron	T	T	T	T

T = tolerant when used properly according to the label; M = marginally tolerant, may cause injury or thinning of the turf; NR = not registered for use on this turfgrass.

\* Dithiopyr may cause injury to certain varieties of chewing fescue.

TABLE 3

## TOLERANCE OF ESTABLISHED WARM-SEASON TURFGRASSES TO PRE-EMERGENCE HERBICIDES

Herbicide	Bahia-grass	Burmuda-grass	Centipede-grass	St. August-inegrass	Zoysia-grass
Atrazine	NR	T	T	T	T
Benefin	T	T	T	T	T
Benefin + oryzalin	T	T	T	T	T
Benefin + trifluralin	T	T	T	T	T
Bensulide	T	T	T	T	T
Bensulide + oxadiazon	NR	T	NR	NR	T
DCPA	T	T	T	T	T
Dithiopyr	T	T	T	T	T
Metolachlor	T	T	T	T	NR
Napropamide	T	T	T	T	NR
Oryzalin	T	T	T	T	T
Oxadiazon	NR	T	NR	T	T
Pendimethalin	T	T	T	T	T
Siduron	NR	NR	NR	NR	T
Simazine	NR	T	T	T	T

T = tolerant when used properly according to the label; NR = not registered for use on this turfgrass.

erant ornamental species. This opens up another possibility of selecting a single herbicide for grassy weed control in the turf and in ornamental plant beds.

Caution should be followed where fine fescues are growing. Certain pre-emergence herbicides, if applied, will thin stands of fine fescues.

A few herbicides—for example, Balan 60 DF, Betasan and Dimension—may be applied to bentgrass maintained as a lawn.

If bermudagrass areas have been overseeded with annual or perennial ryegrasses, a spring application of Pre-M, Surfian, Team or XL will thin the overseeded grasses. Do not apply these herbicides unless the thinning can be tolerated.

Atrazine and simazine are applied in warm-season grasses for winter annual broadleaf and annual bluegrass control.

Herbicide labels emphasize application to healthy well-established turf, and caution about application to turf weakened due to winter climatic conditions, drought or other stress factors.

Certain pre-emergence herbicides may be applied for grassy weed control when seeding or sprigging turfgrasses, or during establishment following emergence (Table 5).

Herbicide rates may vary with geographic region. Labels will give specific information on rates for the turfgrass, for the weeds to be controlled, for sequential or split applications, for the site of application, and for any regional restrictions or precautions.

**Timing**—Pre-emergence herbicides are best applied at least two weeks before expected weed seed germination. In areas with a crabgrass history, pre-emergence herbicides are applied in the spring when soil temperatures approach 53° F. Goosegrass germination is usually two or more weeks later than crabgrass.

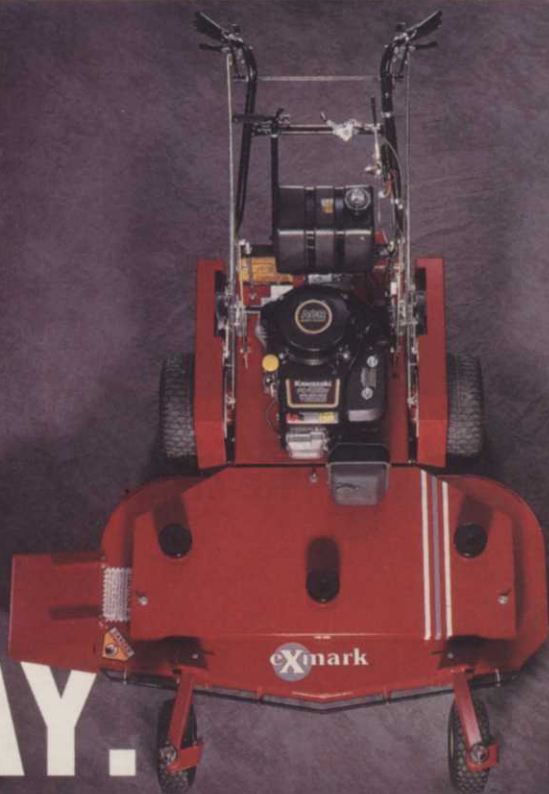
Crabgrass and goosegrass germinate first in thin, open stands of turfgrasses. Germination is delayed and/or reduced in dense stands. Moving from the South to the North, crabgrass may initially germinate from late January into May and continue through the season.

Since all summer annual weedy grasses do not germinate at the same time, split applications, eight weeks apart, are encouraged to maintain effective control throughout the season.

Our research has shown that split applications generally out-perform single applications for goosegrass control and late-season crabgrass control. (However, a single pre-emergence application of Dimension has controlled crabgrass



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throughout the season in a number of states.)

In certain parts of the country, pre-emergence applications can begin six to eight weeks before expected crabgrass germination; under cool soil temperatures little, if any, degradation occurs during this period.

**Reseeding interval**—The time between application and reseeding may affect herbicide choice. Herbicides that control annual weeds may also affect new seedlings of desirable turfgrasses.

The overseeding or reseeding interval depends on herbicide characteristics and the rate applied (Table 6). When reseeding,

TABLE 4

### ANNUAL GRASSY WEED CONTROL RATINGS FOR PRE-EMERGENCE HERBICIDES

Herbicide	Crabgrass	Goosegrass	Annual Bluegrass
Atrazine	P	P	E
Benefin	G	F	G
Benefin + oryzalin	G	F-G	G
Benefin + trifluralin	G	P-F	G
Bensulide	G	P	G
Bensulide + oxadiazon	G	G	G
D CPA	G	P	G
Dithiopyr	G	G	G
Metolachlor	F-G	F	F-G
Napropamide	G	G	G
Oryzalin	G-E	G	G
Oxadiazon	G	G	G
Pendimethalin	G-E	G	G
Siduron	G	F	NR
Simazine	P	P	E

Weed control effectiveness: E = excellent (90-100%), G = good (80-90%), F = fair (70-80%), P = poor (<70%), NR = not registered

TABLE 5

### PRE-EMERGENCE HERBICIDES FOR USE WHEN ESTABLISHING TURFGRASSES

Situation	Herbicide
Cool-season turfgrasses seeded the previous fall	Balan 60 DF, Betasan, Bensumec, Lescosan, Dacthal, Ronstar, Tupersan
New turfgrass seedlings when 1 to 2 inches in height	Dacthal
New seedlings of cool-season grasses	Tupersan
Sprigging bermudagrass	Chipco Ronstar 2G, 50WP*, Atrazine, Princep
Sprigging zoysia	Tupersan

\* Ronstar 50WP has a 2(ee) recommendation in the following states: AL, AZ, AR, CO, FL, GA, HI, LA, MD, MS, NC, NM, SC, TN, TX AND VA

TABLE 6

### OVERSEEDING OR RESEEDING INTERVALS

Weeks after application	Pre-emergence herbicide	Rate: Pounds active per acre
6	Balan 2.5G, 60DF, XL 2G	2
8	Dacthal 75W, 6F Team 2G	10.5 2
12	Dimension 1EC	0.5
12 to 16	Balan 2.5G, 60DF Team 2G XL 2G	3 3 3
16	Betasan 4E, etc. Pre-M 60DG Ronstar 2G, 50W Surfilar 4AS Weedgrass Control	10 3 4 3 4 to 6
24	Devrinol 50WP, 2G, 5G Pennant 7.8E	3 4

proper management practices such as soil cultivation, irrigation and fertilization must be followed. Also, turfgrass seeds should be placed in contact with the soil.

**Herbicide carriers**—Herbicides may be formulated as dry granules including fertilizer carriers or sprayable products. Sprayable herbicides are primarily applied in a water solution; certain ones may also be applied in liquid fertilizer (Table 7). Adequate mixing in the spray tank and agitation during application is absolutely essential, as is uniform spray distribution.

Pre-emergence herbicides need rainfall or irrigation to move them off the sprayed turf foliage into the upper soil levels where weed seeds germinate. If at least one-half inch of rain doesn't fall within a week after application, irrigation is advisable.

**Pre-emergence broadleaf control**—Herbicides principally applied for annual grassy weeds will provide pre-emergence control of certain winter annual and summer annual broadleaf weeds.

Isoxaben (Gallery 75 DF) is a pre-emergence herbicide for control of certain broadleaf weeds in established turfgrasses. Gallery is applied in the late summer or early fall for winter annual broadleaf weeds, and in early spring for summer annual broadleaf weeds. Because Gallery is a pre-emergence herbicide, it does not control established weeds. These should be controlled with post-emergence herbicides. Certain perennials—for example, dandelions and plantains—are controlled from seed. Gallery will fit into a weed management program to supplement the pre-emergence herbicides which are primarily used for the control of annual grassy weeds.

—Dr. Bill Lewis is in the Crop Science Department at North Carolina State University, Raleigh, N.C. All tables used supplied courtesy of the author.

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Azay Sheeps, Jasper Creeping Red, Spartan Hard and Victory Chewings. **Elite Kentucky bluegrass:** Alpine, America, Banff, Bronco, Crest, Indigo, Nugget and Touchdown. **Poa trivialis:** Colt. **Creeping bentgrass:** National.

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TABLE 7

## EXAMPLES OF BROADLEAF WEEDS CONTROLLED BY GRASS PRE-EMERGENCE HERBICIDES

Herbicide	Common chickweed	Mouseear chickweed	Henbit	Hop clover	Y. wood sorrel	Carpet-weed	Prostrate knotweed	Prostrate spurge	Common purslane
Betasan, etc.			•						
Dacthal	•					•		•	•
Devrinol	•					•	•		•
Dimension					•				•
Pre-M	•	•	•	•	•			•	
Ronstar					•	•		•	•
Surflan	•		•			•	•	•	
Team					•			•	
Weedgrass Control	•	•	•	•			•	•	•
XL	•		•			•	•		•

## Potassium and grass production

**Most U.S. soils are low to marginal in soil potassium reserves and require potassium fertilization for healthy turfgrass growth.**

by Jerry B. Sartain

■ The element potassium aids winter survival, disease resistance, promotes root growth, and increases the hardiness of grasses. It's second only to nitrogen in turfgrass tissue. So, in most instances, the addition of potassium fertilizer is needed to avoid a deficiency.

In some respects, potassium is a mystery. Its specific roles in plant growth aren't completely known although it's believed to act as a catalyst.

It seems to be involved in the formation of proteins and carbohydrates, and translocation of assimilates.

**Influence of potassium**—In long-term studies on a sandy soil, the growth rate of Tifway bermudagrass was positively influenced by potassium; but thatch accu-

mulation was not enhanced (Fig. 1). Potassium significantly increased the total dry mass of roots (Fig. 2). Belesky and Wilkinson reported in 1983 that Coastal bermudagrass yield was improved by increasing potassium rate, regardless of N source, while Tifton 44 yield was not improved by increasing potassium when  $\text{NaNO}_3$  was applied.

Other researchers have reported no growth response to the application of potassium.

Differences in response to potassium fertilization relate to the soil type and the status of soil potassium at fertilization.

If the soil contains large reserves of exchangeable potassium or primary potassium minerals, such as mica and feldspars, growth response to potassium fertilization is not probable. On the other hand, turfgrasses growing in sandy or clayey soils of low potassium reserves need potassium fertilization for optimum growth.

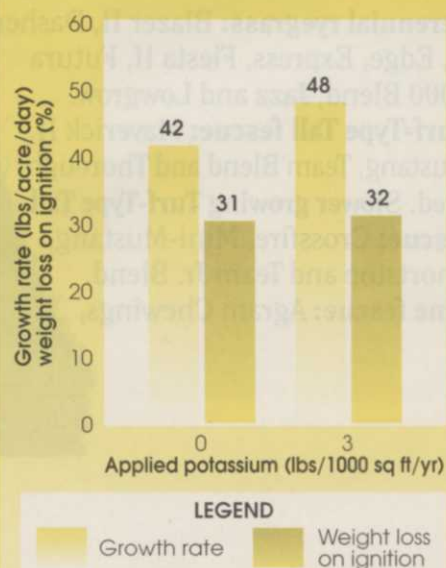
In areas of high rainfall and mean daily temperature, potassium fertilization is necessary. As a general rule, most U.S. soils are low to marginal in soil potassium reserves and require potassium fertilization to optimize growth.

Increasing rates of potassium increase rhizome production, root mass and stand quality of bermudagrass. Spring stand quality is directly related to rhizome

production the previous fall.

By applying more potassium, winter survival of turfgrass is enhanced. In many studies, a balanced fall fertilization program involving nitrogen and potassium has enhanced cold hardiness and winter survival of warm-season turfgrasses. Reducing potassium fertilization rate has also resulted in an observable loss of root system vigor.

FIGURE 1



Source: The author

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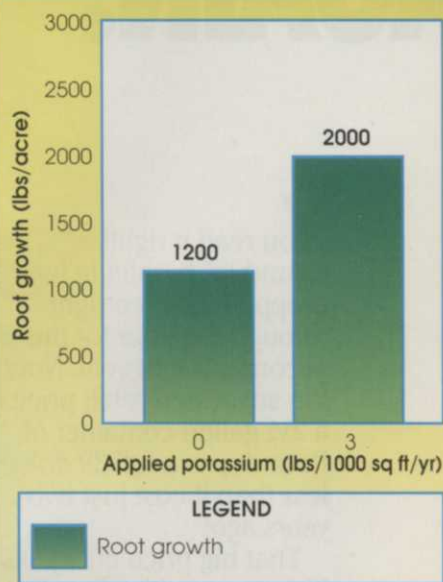
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FIGURE 2

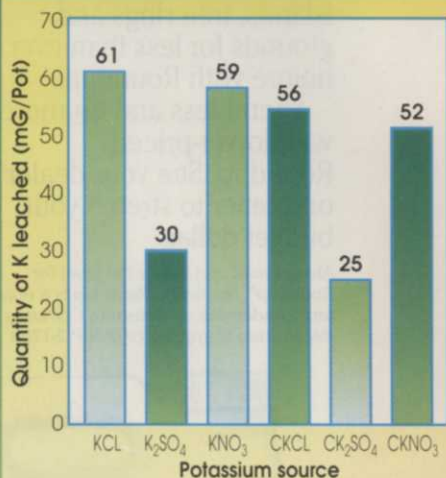
### EFFECT OF POTASSIUM ON BERMUDAGRASS ROOT GROWTH



Source: The author

FIGURE 3

### EFFECT OF POTASSIUM SOURCE ON QUANTITY OF POTASSIUM LEACHED



Source: The author

In Texas, the incidence of leaf spot (*Helminthosporium cynodontis* Marig.) was increased in bermudagrass test plots when phosphorus was supplied without potassium, demonstrating the need for a balanced fertilization program.

**Potassium sources**—Potassium is taken up by the plant roots in the K<sup>+</sup> form. This can be supplied by either soil reserves or fertilizer salts. Soil reserves are generally low in

high in analysis and have low salt indices. Some are of high solubility and are used in preparing liquid fertilizers, while others are formulated with controlled solubility.

**Potassium carbonate** and **potassium hydroxide**, produced on a limited scale, are used in high-purity fertilizers for foliar application or other specialty uses. Their high cost has precluded widespread use as commercial fertilizers.

sandy, highly leached soils. Therefore, potassium for turfgrass production is generally supplied by application of potassium fertilizer salts.

**Potassium chloride** is the most commonly-used commercially-available potassium fertilizer. Because of this material's high analysis and low production cost, it is very popular.

**Potassium sulfate** is used on crops and soils on which a fertilizer with a lower salt index is needed. One of the perks of applying potassium sulfate is the addition of sulfate sulfur, which many of our soils now require.

**Potassium magnesium sulfate**, because of its advantage of supplying both magnesium and sulfur, is frequently used in soils that are deficient in these two elements. The relatively low potassium content of this product limits its inclusion in high-analysis fertilizers.

**Potassium nitrate** is an excellent source of both nitrogen and potassium but, due to cost, is used mostly on crops of high acre value.

**Potassium phosphate** fertilizers have not developed a strong commercial base, due mostly to high costs. In general, they are

FIGURE 4

### MAJOR POTASSIUM SOURCES

Source	% Potassium	% K <sub>2</sub> O	Salt index
<b>Potassium chloride</b> (muriate of potash)	50-52	60-63	1.94
<b>Potassium sulfate</b> (sulfate of potash)	42-44	50-53	0.85
<b>Potassium magnesium sulfate</b>	18	22	1.97
<b>Potassium nitrate</b>	37	44	1.58

Source: The author

**Potassium availability**—Once applied, most potassium fertilizers solubilize and enter the soil solution. This solution potassium is subject to leaching by rainfall if not retained by the soil. Most sandy soils do not retain large quantities of potassium; so it must be applied on a regular basis.

Soil pH affects potassium retention. As the soil pH declines below 6.0, greater losses of applied potassium due to leaching are observed. At a soil pH of 4.5 or less, potassium retention is essentially zero. Thus, an appropriate liming program to maintain the soil pH at 5.5 or above is essential to optimize the efficiency of a potassium fertilization program.

In an unpublished field leaching study, I observed that—over a 112-day leaching period—potassium sulfate leached only about half as much total potassium as did potassium chloride (Fig. 3). Coating the potassium with sulfur did not influence the potassium loss due to leaching. Snyder and Cisar found no growth response, relative to source, for a number of coated potassium fertilizers.

Potassium sources influence the quantity of potassium available to the turfgrass. Horn reported that K<sub>2</sub>SO<sub>4</sub> and K<sub>2</sub>CO<sub>3</sub> were superior K fertilizer sources for bermudagrass compared to KCl and other potassium sources.

In light of the reduced leaching of potassium from K<sub>2</sub>SO<sub>4</sub>, its enhanced growth response, low salt index and high analysis, potassium sulfate is a very desirable source of potassium for turfgrasses.

Additionally, K<sub>2</sub>SO<sub>4</sub> has the benefit of supplying sulfur. On occasion, applying K<sub>2</sub>SO<sub>4</sub> produces a greening response, indicating a probable response to applied sulfur.

—Jerry B. Sartain is a turfgrass fertility consultant in Gainesville, Fla.

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# The *Poa trivialis* challenge



by Craig W.  
Edminster

Few in the grass seed industry, or among end-users for that matter, foresaw the exceptional and largely unfilled demand for *Poa trivialis* (rough bluegrass) in the 1991 overseed season.

The species has few of the bells and whistles which seed industry and turf research scientists said would be necessary for success in the early '90s.

Absent, for instance, are a definitive dehydration avoidance mechanism, *Acremonium* and *Epichloe* endophytes for increased insect resistance, and a dark green color.

Yet *Poa trivialis*, a cool-season perennial turfgrass, has quietly taken over a sizeable portion of the market in regions where overseeding is a yearly occurrence.

It is no longer merely a specialized species for use on golf courses and moist, shady lawns. There is good reason to believe that, if production came closer to matching demand, it would seriously challenge the improved perennial ryegrasses as the grass of choice for winter overseeding.

**Characteristics**—*Poa trivialis* is a sod-forming perennial, adapted to cool, wet, shady areas.

It exhibits a moderately fine texture, is light green to green in color and characteristically has an extensive fibrous yet shallow root system.

## The most significant market for *Poa trivialis* is as a specialty turfgrass in winter overseed blends and mixtures in the South.

*Poa trivialis* is intolerant of drought or moisture-stressed soils and will either enter temporary summer stress-induced dormancy or simply die.

**Advantages**—Here are some of the advantages offered by *Poa trivialis* in an overseeding program:

- **Transition:** *Poa trivialis* is considered to be an "easy transition" species. It can easily be eliminated by fertility/water management, cultural practices or naturally by summer- and warm-season-induced stress.

- **Reduced seeding cost:** *Poa trivialis* seed counts are in the neighborhood of 1.9 to 2.2 million seeds per pound, making for very cost-effective seeding rates. *Poa trivialis* used exclusively or in poly-species mixtures can save an estimated minimum of 20 percent on seed cost.

- **Maximized yearly rounds of play:** *Poa trivialis* can be sown and mowed extremely tight during and after germination. It is not uncommon to dethatch an existing permanent bermudagrass green, sow *Poa trivialis* and allow play the following day.

- **Low soil temperature tolerance:** *Poa trivialis* has shown it can germinate in soil

temperatures ranging from 40° to 50° F rather effectively. Straight *Poa trivialis* as well as ryegrass blends containing it require considerably less hardening off and are, therefore, buffered from cold damage.

- **Competitiveness with annual bluegrass:** Winter overseeding with *Poa trivialis* can effectively reduce annual bluegrass (*Poa annua*) contamination by effectively competing for soil nutrients and sunlight. Similar growth habits, tolerance to low mowing, and preference to cool, wet soils of the two species make for excellent natural competition. As a result, populations of annual bluegrass may decline significantly over time.

- **Impressive stimpmeter readings:** Stimpmeter speeds of *Poa trivialis* overseeded greens are significantly faster than greens sown to straight perennial ryegrass. *Poa trivialis* can be managed to accentuate or lessen relative ball speed.

- **Non-competitive soil stabilization:** Golf superintendents, designers and contractors are often faced with land stabilization problems prior to finish grading and grass planting in temperate warm-season regions. When warm-season grass sprigging and seeding must be postponed until spring (when soil temperatures are optimal), *Poa trivialis* can be used as a non-competitive, reduced-maintenance winter overseed species.

- **Avoidance of iron chlorosis:** Under high alkaline conditions in Southwestern soils (pH greater than 7.5), *Poa trivialis* appears to have a tolerance to low soil iron levels, and will not exhibit yellowing or chlorosis unless under extremely high pH.

- **Soil nitrogen use:** *Poa trivialis* appears to be an excellent user of soil nitrogen when soil temperatures are very

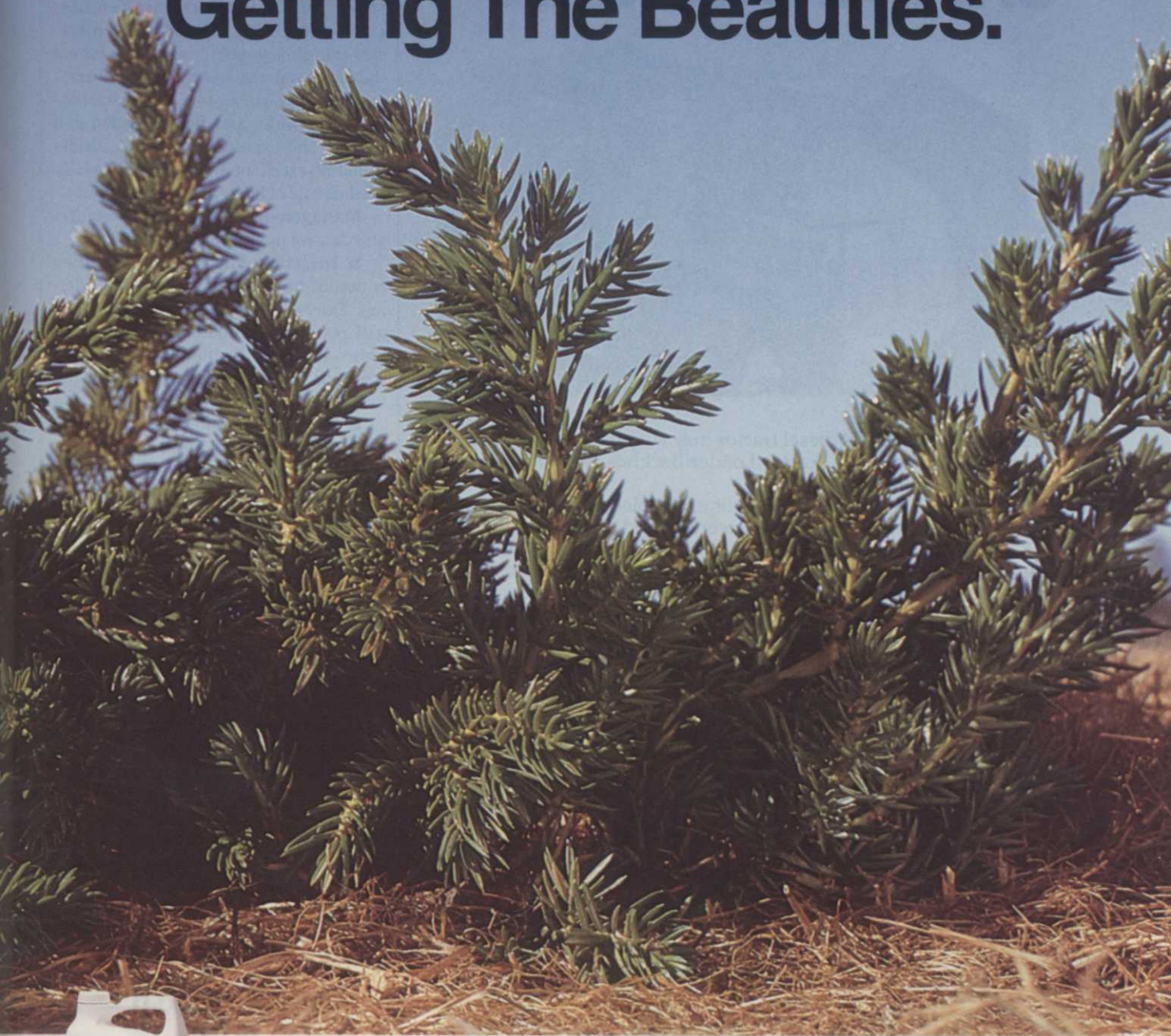
## USING POA TRIVIALIS

Use	Mixture					Seeding rate (lbs./100 sq. ft.)
	Poa trivialis	Perennial ryegrass	Chewings fescue	Kentucky bluegrass	Creeping bentgrass	
For shady lawns in cool, moist temperate areas	20%	20%	30%	30%		4
For intensely shady lawns in cool, moist, temperate areas	100%					2
Options for overseeding dormant warm-season turf on golf course greens and tees	100%					10-13
	15%	85%				25
	15%	60%	25%			25
	60%				40%	6-10

Source: the author



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cool. It continues to exhibit its inherent light green to green color under very cold soil conditions.

**Uses**—*Poa trivialis* is recommended for permanent lawns in moderate or intense shade, and for winter overseed blends and mixtures. It can also be used as a non-competitive, reduced-maintenance, easy-transition winter groundcover for soil stabilization in the South and Southwest.

Delayed warm-season grass establishment on rough and finish-graded golf courses and exposed irrigated roadsides would be excellent sites for *Poa trivialis*. Seeding rate of 80 to 120 pounds per acre.

**Management**—*Poa trivialis* requires an extensive management program:

- **Irrigation:** Supplemental irrigation is needed for dense and aggressive tillering. Extended periods of moisture stress will result in an unattractive purplish-brown leaf discoloration and, ultimately, death. Its roots respond favorably to light, frequent irrigations.

- **Fertilization:** Most desirable: split applications of a balanced fertilizer in moderate amounts with N-P-K ratios of 5-1-2. Applications should be made at establishment and during active fall and spring growth. Heavily shaded areas must be managed with greater nitrogen levels and higher cutting heights.

- **Mowing height:** *Poa trivialis* may be mowed at very low (9/64 to 3/16) heights when planted at very heavy rates on golf course greens and tees. It, however, prefers mowing heights in the range of 1/2 to 2 inches. Mowing higher than 2 inches results in reduced quality.

- **Weed control:** Phenoxy-based lawn chemicals can be used to control broadleaf weeds with excellent results. *Poa trivialis* also appears to be very compatible with annual bluegrass in heavily-contaminated and compacted soils.

—The author is Director of Research at International Seeds, Halsey, Ore.

## Next Month's Cover Story:

### Project Estimating and Analysis

*A leading Boston-area landscape maintenance expert reveals how to start 1992 on the right foot: with more accurate job estimates.*

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# LAWN CARE INDUSTRY

## Degree day = D-Day for turf pests

**A leading entomologist says turf managers, with some simple temperature calculations, can anticipate insect problems.**

■ Can you plot the timing of your turf insecticide applications while reading the morning newspaper?

Yes. And it may help you control turf-damaging pests better than you do now, particularly if you get off your keester and balance your morning forecasting with representative lawn inspections, too.

The process, explained by Dr. Dave Shetler at the Ohio Turfgrass Conference, can translate into less insect damage to clients' lawns, fewer customer complaints and, hopefully, fewer service calls.



**Shetlar: Knowing degree days can reduce service calls**

Temperature is the key.

The life cycles of all insects are, in one way or another, linked to temperature.

That's what you'll be plotting from the morning paper, temperature, more specifically a measurement of temperature known as *degree days* (DDs). Certain turf pests become active during the course of a growing season when certain DDs are reached.

What you want to do is add up DDs as the season progresses, then inspect representative lawns as a particular turf pest's DD range arrives. If the number of pests—as determined by your inspections—reach a threshold you consider to be turf damaging, then it's time to use a control.

But how do we figure DDs?

Actually, there are several methods and all but one are somewhat sophisticated, says Shetler, a landscape entomologist at Ohio State University. Fortunately, the simple way of figuring DDs is accurate enough to predict outbreaks of most turf insect pests.

Shetler says he starts with a base of 50°F. Few insects develop below that temperature. He begins DD calculations on March 1 in

Ohio. (The further south you are, the earlier you should start calculating DDs.)

You can chart DDs in the morning over a cup of coffee in front of a newspaper, or get the previous day's high and low temperatures from the television or radio. Add the day's high and low and then divide the total by two. This gives you a crude average, but

### DEGREE-DAYS FOR SOD WEBWORMS AND WHITE GRUBS

Target pest	Base 50° F
Larger sod webworm (1st generation)	1050-1950
Larger sod webworm (2nd generation)	2600-3010
Bluegrass sod webworm (1st generation)	1250-1920
Bluegrass sod webworm (2nd generation)	2550-3010
Cranberry girdler	1700-2750
Northern masked chafer (1st adults)	898-905
Northern masked chafer (90% adults)	1377-1579
Southern masked chafer (1st adults)	1000-1109
Southern masked chafer (90% adults)	1526-1679
Japanese beetle (1st adults)	1050-1180
Japanese beetle (90% adults)	1590-1925

Source: Dr. Shetlar

### HOW TO FIGURE DDs FOR 7 DAYS

Day	1	2	3	4	5	6	7
Max. temp.	70	75	60	55	65	75	82
Min. temp.	40	45	40	35	45	50	54
Avg. temp.	55	60	50	45	55	63	68
Avg.-base	5	10	0	-5	5	13	18
DD (base 50°F)	5	10	0	0	5	13	18
Cumulative DD	5	15	15	15	20	33	51

Source: Dr. Shetlar

### ELSEWHERE

**Do-it-yourself people risks?, p. 74**

**On written contracts, p. 78**

**Composting: not a hobby, p. 80**

**Pre-paying for jump start, p. 82**

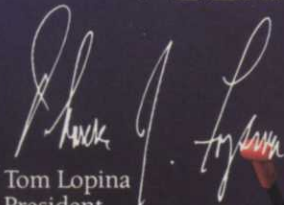
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it's close enough. From this average, subtract 50°F, the threshold temperature.

If the remaining number is a positive number, it means insects have developed correspondingly. Record this number and add them daily as they accumulate. These are DDs, and the number will grow as spring settles in and summer approaches. If, for a certain day, you get a negative number, record a "0."

Shetler says temperature is an excellent

prediction tool because it's based on the biology of the insects, but it's not the total answer.

"Even though we have these degree-day models, some insects don't follow our idea of degree-day," says Shetler. "They may need other environmental requirements for them to become active."

For example, during the summer of 1988, which was unusually warm and dry, the DD model predicted the outbreak of masked chafer adults in the first week of

June. Instead, they didn't peak until the first week of July, immediately after one of the season's first rainfalls.

Shetler suggests that turf managers take the degree-day concept and meld it with their own observations and inspections. Then, he says, they should be able to develop application strategies that target specific insect pests when treatments will be most effective.

—Ron Hall

## Do-it-yourselfers: they're the risk

**This open letter to LM readers says everybody should play by the same rules: Either we all have to post and pre-notify or nobody should.**

■ To the editor:

LCOs have been successful in identifying themselves as "The Source" for information and expertise on home lawn care. In fact, a number of retailers are now introducing a four- or five-step program, which is just a copy of a basic professional lawn care program.

Because of this leadership position, the LCO also receives the "brunt" of, or is the target of, most of the anti-fertilizer and anti-pesticide crusade.

The LCO is required to post lawns following fertilizer and pesticide applications in some locales. Elsewhere, pre-notification is also required.

The LCO is responsible for identifying the products used in their respective programs. Instructions along with *dos* and *don'ts* are provided to the homeowner when applications are made. In many instances, Material Safety Data Sheets are given to the homeowner.

At the same time (generally unknown to the consumer) the LCO is constantly monitoring, measuring and calibrating to insure precise application rates, noting wind direction and velocities so that materials are applied accurately and precisely. Applicators use proper personal protective equipment while making applications and legally dispose of empty bags or containers.

Meanwhile, the homeowner can go to the retail outlet, purchase the products he or she thinks they need, go home and

apply these products with little or no concern (or thought) given any of the above restrictions or precautions. In most cases, they do not have to post or pre-notify while using the same products (chemistry) as the LCO!

If posting and/or pre-notification is required by the professional, does it make any sense to look the other way for homeowner applications? Seems to me that *everyone* making fertilizer and pesticide applications should be required to post or pre-notify, or *no one* should be required to post or pre-notify. I have never met an LCO who was opposed to abiding by these requirements. He simply wants and deserves the same considerations the homeowner applicator currently enjoys.

Actually, posting is really the easy part of the job. The real difference is much greater and should be the reason why homeowners hire lawn care professionals. Briefly, LCOs:

1) are properly trained/certified. They can correctly identify or diagnose the pest in question so that the proper product selection can be made. Further, the application is made at the right time and with equipment which has been correctly calibrated—no mess and no waste for the homeowner.

2) save time for the homeowner and negate the need for application equipment purchases and maintenance. The homeowner doesn't even sharpen the mower blade as recommended, let alone own and maintain the necessary application equipment.

3) handle problems as problems develop. Re-treatments are provided, generally at no charge. This is important because the homeowner has to make another purchase and sometimes ends up with partially filled bags which, after sitting in the garage for a few months, are thrown out with the garbage. Other times, in an effort to empty the bag, the material is applied at two and three times the recommended rate.

4) provide sound advice with mowing, watering and other cultural practices that better enable the homeowner to have a good-looking lawn.

To LCOs, I would say: "It is time to speak out or up for what you are really doing: providing a necessary service at a fair price in a professional (i.e. environmentally sound) manner."

To lawmakers: "Gather all evidence and base your long-range thinking on scientific fact."

—Ron Mau

Howard Johnson's Enterprises  
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## The beat of a different drummer?

**Developers of alternative lawn care programs say the message to clients should be agronomic, not anti-chemical.**

■ When the first winter storm blunders up the Sycamore-rimmed Wabash River Valley like a tired wet dog, it can bring curtains of wet, thumb-sized snowflakes. Or, just as likely, freezing rain.

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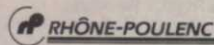
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winding two-lane can slip into a Norman Rockwell canvas of ripening corn and clusters of brickfront ranch homes with attached garages, every third or fourth one of these sporting a basketball backboard.

This is not, on first appearances anyway, prime lawn care country. But Brent Flory, a slender, handsome man whose boyish brown hair is graying at the temples, is building a tight little natural lawn care company around it.

Delphi, Ind., a dot on the road map, is headquarters for his Freedom Lawn. But the company's market extends into Lafayette, home of Purdue University, about 20 miles to the southwest.

The residential lawns Freedom Lawns service are, in addition to being a business, Flory's laboratory. A self-described agriculturist, he's using Freedom Lawn to build a natural lawn care template for other lawn professionals. When he feels it's ready, he will market what he's learned.

The cornerstone of his efforts are the fertilizers he's developing. "We do put a great variety of materials into these mixes," says Flory.

He insists the lawns his company services compare well with chemically maintained lawns in about everything but weed control. Sometimes even that. "If the customer doesn't want to see a weed, he



**Brent Flory is turning home lawns into his laboratory.**

doesn't want my service," he says.

Freedom Lawn doesn't use chemical pesticides, but Flory doesn't make a big deal of it. Instead, he looks for an agronomic reason for a particular lawn problem. Failing that, he investigates and tests natural solutions.

Last fall he tried beneficial nematodes to counter grub infestations in client lawns. They worked well. Within several weeks the grubs had died.

This past spring Freedom Lawn used nematodes again, but control wasn't as predictable. "Some of the lawns did quite well, some of them got whipped up," says Flory. He says he will test milky spore for grub control also.

The Indiana businessman insists he's not anti-chemical. "I don't believe in that kind of hype," says Flory. "I don't think the commercial lawn care operator using chemicals is an enemy of mine."

Mark Miles, like Flory, comes from a farm background. And, like Flory, Miles entered the lawn care business, at least in part, to develop an alternative program for professional lawn care. He started Organic Lawn Care in 1986. (He still describes it as "a big experiment.") This past season it serviced 35 million square feet of lawns in and around Minneapolis, Minn.

Organic Lawn Care uses several natural fertilizers (which Miles helped develop himself), bio-activators, soluble humic acid, etc. It also sells these products to the professional market.

In fact, Miles' operation offers a complete alternative lawn care program package with training and marketing manuals, customer information, support literature, and products.

"We're not saying chemicals are taboo," says Miles. "But in many cases they're being used as a convenience and they're being used too much."

Miles admits that his company, Organic Lawn Care, will make a single herbicide application per property upon request of the property owner. "But we tell each customer we are not a weed-and-feed service. We'll spray the weed control only after they've agreed to help us fix the problem that caused the weeds." Similarly, company technicians may, on occasion in the spring, make spot applications of pendamethalin on particularly troublesome patches of crabgrass.

"The long-term solution is to find out what conditions are causing the crabgrass and then to correct these," says Miles.

"I'm not going to say what's pure. Who knows what's pure?," says Miles. "But, by the time a person buys the service from us, we've tried to identify all the good and bad points. They'll have an understanding of what's organic and what's not."

—Ron Hall

## Turfgrass: It's not enough to be dwarf, you've gotta be tough, too

■ The search for turfgrasses that need fewer mowings and/or produce less clippings is at least 20 years old, likely older.

This quest invariably leads back to the subject of turfgrass dwarfness which researchers likewise have been seeking for at least 20 years. For example, Dr. Terry Riordan, now at the University of Nebraska, says dwarfness was one of the characteristics he sought in turfgrasses he worked on in Florida in 1970.

In fact, he said, one grass he refers to as a "no-mow bermudagrass" looked promising until it encountered stress. Then it died. It had little recuperative potential. Nematodes ravaged it.

"It would be nice to have a grass we don't have to mow as much but we still have to have some vigor from the plant," says Riordan.

That's the catch: the turfgrass plant that doesn't grow as high or as quickly (and doesn't replace its leaves as quickly or often) must also possess unusual agronomic vigor to survive in home lawns or on golf courses. With heightened concerns over pesticide issues, plant breeders also seek some level of pest tolerance from the plant. And they want turfgrasses that can compete against weeds.

No single variety of turfgrass can accomplish all this.



That's why plant breeders continually seek improvements in all varieties. Progress is exceedingly slow but steady.

Riordan, who has several turfgrass patents as a result of his research, says the work on dwarf tall fescues is particularly encouraging but far from over.

"Growers can see that they're dwarf because they don't grow as tall as other grasses in the field," says Riordan.

"But we really need to do a better job in finding out how these turfgrasses perform and how much clipping reduction we're going to get from them. We do not really have it well documented," he says.



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## Composting: it's not a backyard hobby anymore

### Will yard waste landfill bans boost the growth of compost facilities, spur a green industry demand for recycled waste products?

■ Most lawn and landscape service professionals haven't made up their minds about compost yet.

They're not sure they want (a) to produce it, (b) to take their landscape waste to someone else to produce it, (c) to use compost in their own services, or (d) to sell it.

Woven through these doubts is the dollar sign. And, of course, knowing what compost is and what it can or cannot do.

Many in the green industry are just now educating themselves about the material.

"I think at first you're going to see everyone gaining some interest and knowledge about composting," says Ed Janesz of Kurtz Brothers, Inc., Cleveland, a major supplier of compost, topsoils and other landscape materials in Ohio.

Compost is an accumulation of organic matter augmented with soil and nutrients to provide decomposition. It can be made from a variety of organic waste materials.

It's produced through aerobic microbial processes. Unless oxygen is present or provided through periodic mechanical turning/aeration, the process turns malodourously anaerobic.

The finished product is dark, moist and all but odorless. It's most often used as a soil conditioner or mulch, something that's added to the soil or something that's spread on top of it. It's not classified as a fertilizer because its N-P-K analysis is extremely low, although it does contain trace elements that plants need. It generally has a pH of between 6.9 and 8.1. Part of the value of compost lies in its ability to hold nutrients in the rootzones of plants.

Increasingly, composting is discussed as an alternative to dumping landscape wastes, primarily leaves and grass clippings, in landfills. Even the most optimistic concede it'll be a partial solution at best.

Even so, thousands of tons of leaves and grass clippings will be entering the Ohio recycling stream as of Dec. 1, 1993, the date when landfills there quit accepting yard waste. Several other states are following similar timetables.

Not coincidentally, Ohio is one of a handful of states that have—or will soon have—regulations for locating and operating commercial compost sites. Ohio's rules are nearly complete.

For example, these regulations will stipu-

late that compost facilities be located on compacted clay sites, and that they be operated correctly to discourage leaching and odors. Contained in over 40 pages of verbiage, the Ohio rules at least tacitly acknowledge that composting is now more—much more—than a backyard activity.

Janesz, who carries the unwieldy title of organic recycling development manager for Kurtz Brothers, offers these observations about composting:

- Although many small and community compost facilities will be started, eventually they'll give way to larger, more efficient compost operations.

- Suppliers, some coming from Europe where large-scale composting is commonplace, will begin providing some of the specialized machinery needed for cost-effective and quality-conscious operations.

- There will be a slowly growing market for compost, but only if it's of consistent and



Ed Janesz says yard waste can become valuable compost.

high quality.

Customer education is what Janesz sees as one of the biggest challenges facing the marketing of compost. And marketing will become increasingly important as the volume of compost increases after landfills are closed to yard wastes by 1994.

"If you do a good job of educating your customers about compost, they're going to buy it again and again and again," promises Janesz.

## What industry, public perceive to be organic is not the same

■ Are we all talking the same language concerning today's fertilizer products, specifically the organic products?

Chuck Darrah from CLC Labs, an independent soil testing laboratory in Ohio, thinks not.

"There's no doubt about it," says Darrah, "it's confusing."

The confusion starts with the definitions of these products. Regulators, usually with backgrounds in chemistry, supply the official definitions (each state is free to adopt its own) while end users typically describe fertilizer products from an agro-

nomous viewpoint.

For example, the commonly-used nitrogen source urea would be classified as a "synthetic organic" fertilizer, according to the recognized definition of "synthetic organic."

"I don't think that many of your lawn care customers would accept urea as an organic fertilizer," says Darrah. "The public, I think, perceives organic as being natural. The public perceives organic as what, technically, is defined as natural organic."

These distinctions are important, says Darrah, because fertilizer suppliers are



Chuck Darrah: does public know what organic is?



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beginning to mix manmade (synthetic) and animal and/or plant wastes or by-products (natural) into hybrid fertilizer products.

He says most lawn care operators don't use all natural products because the nitrogen levels are low, typically around four percent. That would mean hauling and

applying 10 times more product than they'd need compared to using urea...or five times more product if their normal fertilizer is 20 percent nitrogen.

"Those of us who have worked with these products recognize that we can overcome some of these disadvantages by putting synthetic organics back in with

the natural organic fertilizer," says Darrah.

And what's wrong with synthetic fertilizers?, someone at the Ohio Turfgrass Conference asked Darrah after his talk about fertilizers.

Nothing, says Darrah. It's just that some of the public perceives natural fertilizers are safer or better.

## Pre-payments give cash jump-start on your next application season

**Money is the name of the game. Some of this executive's ideas might help you get and keep more of it.**

■ Many lawn care business people offer pre-payment incentives to their customers, but is it a good idea?

Generally, yes, says Edward Coia, vice president of Lawnmark, Hudson, Ohio.

Offering incentives to get customers to pay for their programs before service begins—sometimes months before it begins:

- **helps** companies through cash-lean winter months;

- **reduces** the amount of money a company has to borrow over the winter; and

- **allows** a company to keep valuable service personnel rather than lay them off in November.

"The name of the game today is cash," says Coia, a speaker at the recent Professional Lawn Care Association of America Conference. "You've got to have cash."

Coia's company, Lawnmark (\$12 million in sales in 1991, 10 branches) gives its customers three opportunities to pre-pay.

Coia says Lawnmark receives about 35 percent of its sales in pre-payments.

"You can have all the sales in the world, but it's not a sale until you put that stamp pad on the back of that check and it's in your checking account," says Coia.

If Lawnmark customers pay before Dec. 31, 1991 they receive a six percent discount plus another \$5 off. If they pay by March 1st six percent off, and if they pay within 10 days of their first application, a five percent discount. (Actually, these discounts may vary year to year as interest rates vary. When interest rates are high, some companies seek pre-payments more aggressively. Interest rates are extremely low now.)

But, getting money upfront has perils of its own, Coia believes. If a company spends pre-payment money unwisely or too soon, it may find itself strapped for cash during May and June when lawn application costs are highest.

That's one reason Coia views pre payments, at least in a recordkeeping sense, as a liability.

"We owe that money to the customer because we haven't done any work for them yet," he says. "We don't book it as a sale. As we make each application we'll write a portion off to reduce that liability. We treat that like it's borrowed money, because that's what it is."



**Edward Coia:**  
Go for the jugular.

Some other observations by Coia during his presentation at

the PLCAA Conference:

- Allowing customers to pay for lawn care with credit cards is a good idea for many lawn care companies. Sure, there's a charge (rates vary, so it's a good idea to shop) but payment by a card eliminates some of the frustration of collection. "Few people realize the cost there is in collecting an invoice," says Coia.

- Find several good suppliers and stick with them. Then you can usually arrange more favorable financing terms. "Get as much extended term from your suppliers as possible. Use their money," says Coia.

- Buy only as much material as you're going to use each application season. Let's assume you made \$50,000 profit for the season, but you were left with \$30,000 worth of materials. In essence, that means you only have \$20,000 cash available. And you're paying storage costs for the excess inventory too.

- If you're in a cold-weather market and your company's idle for the winter, why insure your service vehicles? Check with your insurance agent about taking coverage off the vehicles in the winter. Make sure you have the vehicle keys though.

## '92 PLCAA officers

■ The 1992 officers of the Professional Lawn Care Association of America: President Robert E. Andrews, The Greenskeeper, Carmel, Ind.; President-Elect Edward J. Coia, Lawnmark, Hudson, Ohio; Vice President John Robinson,

Green Drop Lawns, Ltd., Calgary, Canada; and Secretary/Treasurer Patrick J. Norton, Barefoot Grass Lawn Service, Worthington, Ohio.

New PLCAA directors, three-year terms: Thomas F. Murrill, ChemLawn

Services Corporation, Columbus; Norman Goldenberg, ServiceMaster Consumer Services, Miami; and Louis J. Wierichs, Jr., ServiceMaster Lawn Care/Fox Cities, Appleton, Wisc. Associate Director Peter Machin, The Andersons, Maumee, Ohio, will serve a two-year term as a PLCAA director.

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| 0010 <input type="checkbox"/> Sports complexes   | 0060 <input type="checkbox"/> Military installations & prisons            |
| 0015 <input type="checkbox"/> Parks  | 0065 <input type="checkbox"/> Airports                                    |
| 0020 <input type="checkbox"/> Rights-of-way maintenance for<br>highways, railroads & utilities | 0070 <input type="checkbox"/> Multiple government municipal<br>facilities |
| 0025 <input type="checkbox"/> Schools, colleges & universities                                 | <input type="checkbox"/> Other type of facility (specify)<br>_____        |
| 0030 <input type="checkbox"/> Industrial & office parks/plants                                 | _____   |
| 0045 <input type="checkbox"/> Condominiums/apartments/housing<br>developments/hotels/resorts   | _____   |

#### B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:

- |   |  |
|---|--|
| 0105 <input type="checkbox"/> Landscape contractors (Installation<br>& maintenance) | 0135 <input type="checkbox"/> Extension agents/consultants for<br>horticulture |
| 0110 <input type="checkbox"/> Lawn care service companies                           | <input type="checkbox"/> Other contractor or service<br>(specify) _____        |
| 0112 <input type="checkbox"/> Custom chemical applicators                           | _____  |
| 0125 <input type="checkbox"/> Landscape architects                                  | _____  |

#### C. SUPPLIERS

- |   |   |
|---|---|
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| 0210 <input type="checkbox"/> Dealers, distributors | _____   |

#### 2. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR TITLE? (Check only one)

- 10  EXECUTIVE/ADMINISTRATOR—President, owner, partner, director, general manager, chairman of the board, purchasing agent, director of physical plant
- 20  MANAGER/SUPERINTENDENT—Landscape/ground manager, superintendent, foreman, supervisor
- 30  GOVERNMENT OFFICIAL—Government commissioner, agent, other government official
- 40  SPECIALIST—Arborist, forester, architect, consultant, agronomist, pilot, instructor, researcher, horticulturalist, certified specialist
- 50  OTHER TITLED AND NON-TITLED PERSONNEL (specify) \_\_\_\_\_

# You don't need a written contract, but you do need to keep clients informed

■ Before they begin service, some lawn care providers require the homeowner to sign a contract. Many do not. The customer's word is good enough.

This is not expected to change significantly anytime soon, lawn care providers tell LANDSCAPE MANAGEMENT. There is no rush by LCOs to get clients to sign written contracts, although some LCOs have made it a part of their standard business practice.

Many LCOs, however, operate under the so-called negative option principal—lawn service continues indefinitely until someone calls a halt to it.

The practice is well established and accepted by consumers in most markets. Typically, lawn care companies, through their pre-season promotional and sales activities, let customers know that service is continuing. Homeowners shouldn't be (and rarely are) surprised when the lawn care vehicle shows up for the first application early in the spring.

Richard L. Lehr, legal advisor for the Professional Lawn Care Association of America, says even though there may not

be a written contract between an LCO and a homeowner, there can be, and often is, an oral contract.

An oral contract is fine, says Lehr, as long as both the LCO and the client have a mutual understanding of what services are to be provided, when they're to be provided, etc.

"One of the best things any lawn care operator can have going for him is a well informed consumer," says Lehr. "It's the uninformed consumer who hears something or reads a snippet in *USA Today* and thinks he's armed with the knowledge to take you on."

There are advantages to having a written contract, however, says Lehr, including a record of the responsibilities and obligations of both the lawn care company and the customer.

"I don't want a company to be in a situation where a customer says, 'wait a minute, your salesman said this,' or, 'your technician said that.' A contract establishes certainty," says Lehr.

Here are some suggestions about customer contracts Lehr offered during a pre-

sentation at the PLCAA Conference this past fall:

- Is your contract is consistent with your policies? If your contract makes guarantees (100 percent satisfaction etc.), be prepared to act them out.

- If you include disclaimers in your contract, make sure they're in easy-to-understand language, they're noticeable, and they limit your exposure to repairing or replacing anything you've damaged as the result of your service.

- Make sure that anyone in your company that talks to customers knows the difference between making statements that can be considered a warranty/guarantee, and those that are salesmanship/puffery.

- Consider having language in your contract that allows the introduction of a third party to arbitrate disputes concerning quality of service or damages arising from service.

- Make sure technicians complete their paperwork for each service stop.

- Consider incorporating a clause in your contract making the customer responsible for all attorneys' fees and court costs in actions arising from their breach of contract.

"Even if you don't go to a contract, make sure the customer understands the type of lawn care service that you provide and what it means," adds Lehr.

## Do you offer coupons? Read this

■ Some lawn and landscape business owners use coupons to boost service and product offerings, particularly during the spring selling season.

Their coupons are among the 2.63 billion issued by businesses each year. Consumers redeemed \$4.5 billion worth of them in 1989. Return rates are highest for direct mail coupons and lowest for those that appear in newspapers, says Kermit Meyers, director of Summary Scan, a division of the Advertising Checking Bureau.

Rate of return depends not only on the medium used, but also such elements as design and size.

Here are four rules to keep in mind:

**1.) Make your special offer the**

**largest part of the design.** There are three elements to a coupon design: the special offer; the business name, address and phone number; and the type of business. Readers spend less than two seconds scanning a coupon, so the offer has to stand out.

**2.) Don't skimp on the offer.** The most effective coupon offers include messages like "two-for-one," sizeable discounts, money off, and free.

**3.) Don't crowd the message.** The reader will notice the uncrowded coupon with the clean message. Remember, you just have to include the offer; the name, address and phone number of the business; and the service or product you offer. That's all.

**4.) Devise a way to track redeemed coupons.** This allows the advertiser to gauge cost effectiveness and also highlights the localities (if you printed coupons for different areas on different colored paper, for instance) which should be targeted for future marketing efforts.

## '92 GIE in Indianapolis

■ Indianapolis is the location for the 1992 Green Industry Expo. The dates are Nov. 17-19 at the Indiana Convention Center.

This past November, 290 companies exhibited at the GIE in Tampa. Says Ann E. McClure, GIE show manager, "Our booth sales were up from 1991 and the show floor traffic was heavy over both days of the Expo."

In a related matter, the Professional Lawn Care Association of America (PLCAA) reported that nearly 1,000 people attended its educational conference held in conjunction with the GIE.

# HOT TOPICS

## The Missoula vote: How public opinion was changed

**For a classic case of manipulating the public opinion, the industry needs look no further back than last November's election.**

**WASHINGTON**—When the college town of Missoula, Mont. defeated a local lawn pesticide bill 57 to 43 percent last November, it became a classic case of how public opinion can be changed through an informational, educational campaign.

Initial pre-vote research indicated that the townspeople were inclined to pass the measure, which would have made the homeowner responsible for posting after pesticide applications. The odds favored the ordinance 58 to 37 percent, with 5 percent undecided.

Prior to the election, a public education program was instituted by a coalition that consisted of the Coalition for a Sensible Pesticide Policy (CSPP), Responsible Industry for a Sound Environment (RISE) and a local yard and garden group.

**The campaign**—Here are the components of that campaign:

✓ **Television spots:** A 30-second television commercial featured an elderly neighbor-type receiving a citation from a police officer. It brought home the "Big Brother is watching" concept used in other campaign components.

✓ **Radio spots:** Three radio spots were aired. One called the measure unnecessary and expensive; another said that neighbors don't have to be forced to communicate; and the third said that Missoulians "need a greener, friendlier Missoula, not more Big Brother."

### Missoula voters polled:

What was the main reason for your vote against the local pesticide law?

too much govt. control.....23%  
unnecessary.....16%

What was the main reason for your vote for the local pesticide law?

to notify people with kids & pets.....17%  
community right-to-know.....14%  
reasonable request.....11%

Were you aware of the ad/publicity campaign against the local pesticide law?

yes.....81%  
no.....17%  
not sure.....2%

What type of advertising do you remember?

television.....63%  
newspaper.....9%  
direct mail.....7%  
radio.....3%

✓ **Newspaper:** An advertising insert featured a quote from former Surgeon General C. Everett Koop, explaining that pesticides are heavily tested and are of low risk when used as labels direct.

✓ **Direct mail:** Lawn care customers, who are generally aware of the benefits of lawn care pesticides, received a flyer discussing the ordinance's various defects.

✓ **Tele-solicitation:** A phone bank placed calls to voters for the two days prior to the election, reminding them of the information they had seen and heard, and urging them to get out and vote the measure down.

✓ **Corporate:** Washington Corporations, one of the area's largest employers, routed a memo to its employees informing them of the ordinance's shortcomings and urging them to vote against it.

**Final results**—The ordinance's defeat reflected a nearly 20 percent turnaround in voters' views.

A post-election survey (see chart) indicated that many voters were confused by the ordinance. Although ordinance supporters complained that advertising led people to believe the measure would ban pesticide use, the survey found that most were aware this was not the case.

### INSIDE

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**Eight new  
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**Landscaping  
for value,  
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## Environmental restrictions put damper on golf

**CHICAGO, Ill.**—The president of the American Society of Golf Course Architects blames "excessive environmental restrictions" for delays in the opening of new golf courses.

"Myriad federal, state and local agencies all intertwine to make today's application for the construction of a golf course an endless quagmire of delays and revisions," according to Tom Clark.

"Architects have been able to meet these challenges, but it's getting more difficult every day," says Clark, who suggests the delays might dissuade potential developers from entering the golf market.

Clark has no quarrel with environmental awareness, but says the duplication of

government restrictions is not productive.

"We've shown that golf courses can coexist with nature, serve the needs of a growing population and preserve open, green space," says Clark. "Furthermore, architects have shown the utmost respect for the environment and that we can govern ourselves in this area."

Clark compares a Georgia golf course built in 1985-86 with a mere five permits, to a current project in the Washington, D.C. area, which has so far required 52 permits and engineering expenditures of more than \$300,000.

But Clark tempers his complaints with a solution: an upcoming ASGCA publication which will address key environmental issues. "The book will be distributed to state, federal and local agencies so questions concerning key issues are addressed prior to submitting for environmental permits," says Clark.

## Builder has environmental commitment

**WASHINGTON**—Winchester Homes, Inc. recently planted 100 trees near a Washington, D.C., highway intersection in an effort to emphasize the company's commitment to environmental responsibility.

"Our commitment to create and ensure a quality lifestyle for Winchester homeowners and prospective home buyers extends beyond the design and construction of quality homes," says Christopher Zell, Winchester vice president of marketing. Winchester's goals, according to Zell, is to encourage and protect the environment and natural resources through afforestation—the establishment of new forest lands—and reforestation activities.

Fifty volunteers—including company employees and their families, homeowners and other community members—showed up for the tree planting. Volunteers were assisted by the Forestry Division of the Maryland Department of Natural Resources.

The Cloverleaf Planting is part of Maryland's "TreeMendous" program, begun in 1989 by Gov. William Schaefer, to assist in the reforestation of state highways and major intersections.

"The cloverleaf planting at this intersection will help to achieve good air quality, increase water filtration in the soil and increase the aesthetic value of the highway by providing a view of mature, green forests," says Zell.

## College requesting sites for training

**LAKE CITY, Fla.**—Lake City Community College is looking for co-op training sites for its summer landscape program.

All of the college's courses in golf course operations, landscape technology and turf equipment management require co-op sponsorship.

John Piersol, chairman of the golf course operations at the college, says quality sites that will provide meaningful training for the students are needed.

Piersol also notes that the school will graduate more than 20 golf course mechanics in May of 1992.

Contact Piersol at Lake City Community College, Landscape Operations, Rt. 3, Box 7, Lake City, FL 32055.

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## HOT STUFF

### ALCA now manages exams

**FALLS CHURCH, Va.**—ALCA is now managing the National Council for Interior Horticultural Certification. It took over that certification from the Ohio Florist Association (OFA) on Sept. 1, 1991.

ALCA says interior landscape contractors can now be recognized through its Certified Landscape Technician and a Certified Landscape Professional designations.

ALCA interior certification exams: the OFA short course July 11-15, 1992 in Cincinnati, the ALCA Interior Plantscape Division Conference Oct. 2-5, 1991, in Columbus. For more information, contact: Elise Lindsey, ALCA, 405 N. Washington St., Falls Church, VA 22046; (703) 241-4004.

### 8 bentgrass varieties on tap

**STATE COLLEGE, Pa.**—Penn State University researchers are developing eight advanced varieties of bentgrass which could "set new standards for density, quality and performance," according to Dr. Joe Duich, director of Penn State's turf research program.

"The increased use and extraordinary agronomic demands on creeping bent have led to the development of new varieties," says Duich, who was to retire from Penn State at the end of 1991.

Duich says "more and more golf courses" are using creeping bent for tees, fairways and greens.

### Home builders landscape, too

**DES PLAINES, Ill.**—A recent survey of 1500 home builders and remodelers found that the bigger the builder, the more likely it will also offer landscaping services.

According to the survey, 20.3 percent of builders with annual sales of less than \$500,000 offer the service. Landscaping is done by 36.4 percent of builders with sales of more than \$5 million.

The builder/remodeler survey was conducted by *Professional Builder & Remodeler* magazine.

### Landscaping for value

**SACRAMENTO, Calif.**—A well-developed and well-maintained landscape improves home property values in California by an average of 7-1/2 percent, according to a survey of real estate agents, brokers and landscape appraisers.

The California Association of Nurserymen (CAN) surveyed 184 professionals. According to the respondents, quality landscaping can speed a home's rate of sale by five to six weeks. Thus, two-thirds of the real estate agents recommend improving their client's landscape to help sell the home.

"First impressions can sell a home," says Tom Carnahan, past president of the San Fernando Valley Board of Realtors. "Landscaping is an integral part of that first impression."

Adds CAN president Ralph Klages: "According to *Money* magazine report, a new landscape has a recovery value of 100 to 200 percent."

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# GREEN INDUSTRY EVENTS

## FEBRUARY

**10-17:** International Golf Course Conference and Show, New Orleans Convention Center. Contact: Linda Fortunato, GCSAA, 1421 Research Park Dr., Lawrence, KS 66049-3859; (913) 841-2240.

**11-13:** Woody Ornamentals IPM, Waltham, Mass. Contact: Kathleen Carroll, Univ. of Mass. Cooperative Extension, French Hall, Amherst, MA 01003; (413) 545-0895.

**18-23:** National Arborist Association annual meeting, The Registry Resort, Scottsdale, Ariz. Contact: NAA, P.O. Box 1094, Amherst, NH 03031; (603) 673-3311.

**18-21:** International Erosion Control Association conference and trade show, Reno, Nev. Contact: Ben Northcutt, P. O. Box 774904, Steamboat Springs, CO 80477; (303) 879-3010.

**20-21:** "Investing in Your Future," Rockville, Md. Contact: Landscape Contractors Association of Md, D.C., Va., 9053 Shady Grove Court, Gaithersburg, MD 20877; (301) 948-0810.

**21-22:** National Lawn Equipment Expo, Orlando, Fla. Contact: Thomas J.

Ganz, 2126-A Hollywood Blvd., Hollywood, FL 33020; (800) 992-2562.

**22:** Women in Horticulture annual conference, Seattle (Wash.) Airport Hilton. Contact: Tory Galloway, (206) 784-6449 or Gina McCauley, (206) 567-4941.

**22-24:** Conference on Insect and Disease Management on Ornamentals, Orlando (Fla.) Peabody Hotel. Contact: Nancy Lawler, Society of American Florists, 1601 Duke St., Alexandria, VA 22314-3406; (800) 336-4743 or (703) 836-8700.

**24-26:** Beginning in the Nursery Business, Virginia Tech, Blacksburg, Va. Contact: Continuing Education Center, Virginia Tech, Blacksburg, VA 24061-0104; (703) 231-8000.

**25-27:** Illinois Landscape Contractors Association Winter Seminar, Chicago Holiday Inn O'Hare. Contact: Julie Newill, ILCA, 2200 S. Main, Suite 304, Lombard, IL 60148; (708) 932-8443.

**26:** New Jersey Landscape '92, Meadowlands Convention Center, Secaucus, N.J. Contact: Skip Powers, 630 Valley Ct., Westwood, NJ 07675; (201) 664-6310.

**27-28:** Landscape Industry

Conference and Trade Show, Denver. Contact: Associated Landscape Contractors of Colorado, 5290 E. Yale Circle, Suite 100, Denver, CO 80222; (303) 757-5611.

**29-March 1:** Tampa Bay Horticultural Trade Show, Florida State Fairgrounds, Tampa. Contact: Tampa Bay Wholesale Growers, 6804 Gunn Hwy. #C, Tampa, FL 33625; (813) 920-4393.

## MARCH

**2-5:** Vertebrate Pest Conference, Newport (Beach, Calif.) Inn. Contact: Dr. Terrell Salmon, DANR-North Region, Research Park Facility, University of Calif., Davis, CA 95616; (916) 757-8623.

**3-4:** Golf Course Design Principles, Cincinnati, Ohio. Contact: GCSAA, (913) 832-4444.

**9-10:** Landscape Design & Plant Materials, Bloomington, Ill. Contact: GCSAA, (913) 832-4444.

**10:** Turfgrass Stress Management, West Chester, Pa. Contact: GCSAA, (913) 832-4444.

## CUSTOMER SERVICE TIPS

### Brainstorm for service ideas

by Ed Wandtke

■ Bringing personnel together to work on a specific objective has long been used by companies as a method of increasing creativity. Apply the brainstorming concept to your customer service program in order to improve its effectiveness. This is more effective than telling your technicians or office personnel how they should handle customers.

**1.** Two days before the meeting, provide a list of topics to be discussed. Some employees need time to think about a topic before they can contribute effectively.

**2.** The first step on the day of the meeting is to narrow the topic down into a spe-

cific problem which all of the attendees agree upon.

**3.** Provide some quiet time for reflection on the topic. Ten to 15 minutes seem to work best. Encourage active participation from all of your employees. Ideas, no matter how off-the-wall, need to be presented because they may identify a different opportunity for solutions.

**4.** Use a flip chart. Write all suggestions down and hang the chart papers with them across the front of the room. Visualization of suggestions and seeing alternatives often will lead to additional input or clarification of potential solutions. Do not rush this process.

**5.** Have participants eliminate the least attractive suggestions. This allows them the opportunity to reinforce the better recommendations but avoid comment on poor or discarded ideas.

**6.** Then have employees rank the balance of their suggestions as "practicable," "possible," or "least unlikely."

Brainstorming is most effective when a problem is defined and then recommendations are directed toward solutions of only that problem. It will take patience and practice for the leader of the session to keep the participants on the specific problem. Future sessions will benefit from the time spent in initiating this method of improvement in your company. Employees will also feel their ideas are being considered by the owner.

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**REFERENCE GUIDE**—Compiled by the American Horticultural Society, the completely revised and expanded "North American Horticulture: A Reference Guide" is available for \$75. The 368-page book is divided into sections that include national grower trade associations, zoological parks, horticultural periodicals, etc. To order, call (800) 257-5755 or write Order Dept., MacMillan Publishing, Front and Brown Streets, Riverside, NJ 08075-1197.

**ON OPERATING COSTS**—The Associated Landscape Contractors of America has published an 80-page "ALCA Operating Cost Study" that provides the most current and detailed

descriptions of an "average" company's assets and liabilities, sales, direct job costs and indirect and administrative overhead. It is \$25 to members, \$45 to non-ALCA members, plus \$2 shipping and handling. To order, contact ALCA at 405 N. Washington St., Suite 104, Falls Church, VA 22046; (800) 395-2522. (In Virginia, dial (703) 241-4004.)

**DEER TICK CONTROL**—"The Comprehensive Deer Tick Control Manual" is available from EcoHealth in Boston, Mass. Included in the publication are landscape techniques for reducing tick habitat and reducing the attractiveness of the property to deer. For more

information, write EcoHealth, 104 Broad St., Boston, MA 02110 or phone (800) 234-8425.

**SAFETY POSTER**—A new free illustrated Personal Protection safety poster has been created by Precision Laboratories. The poster provides vital facts and information regarding chemical absorption, prevention and protection. It offers dos and don'ts on worker chemical safety, and can be conveniently hung in the workplace. For your poster, write Precision Laboratories, P.O. Box 127, Northbrook, IL 60065; or call (708) 498-0800.

**SUPERVISORY TRAINING**—The Professional Grounds Management Society is offering its "Landscape Management Supervisory Training Manual" for \$69.95. There is a 15% discount for non-members becoming new members, and a 50% discount for PGMS members. A \$5 postage and handling fee applies to all purchases. Chapters include all types of tools, mechanical equipment, pesticides, material safety, turf information, tree-shrub-annual information, biology of plants and customer service. To order, send check to: PGMS, 10402 Ridgland Rd., Suite 4, Hunt Valley, MD 21030.

**GARDEN CENTER CATALOG**—The "Stocks Catalog" will be sent to more than 12,000 garden centers nationwide this year. It features product information from manufacturers, growers and suppliers, plus 48 pages of the latest in marketing trends and merchandising information. For more information: Stocks International, P.O. Box 9379, Washington, DC 20005; (800) 325-6228.

**ON ESTIMATING**—Means' "Landscape Estimating" second

edition and "Site Work & Landscape Cost Data" 11th edition are now available. "Landscape Estimating" by Sylvia Hollman Fee is a chart-filled 265-page hardback. It retails for \$57.95. "Site Work..." is soft-bound, 483 pages, and retails for \$74.95. You can purchase both for \$109.95, a savings of \$27, by contacting: R.S. Means, P.O. Box 800, Kingston, MA 02364; (617) 585-7880.

**MARKETING TOOL**—"Landscape: It Works for Everyone" is a four-color brochure from the Associated Landscape Contractors of America. It is for use in promotional mailings or with their sales materials. Prices range from \$2.75 for non-member orders of fewer than 50 to \$0.80 for member orders of 500 or more. For more details, call ALCA at (703) 241-4004.

**MEDIA CLIPPING SERVICE**—Green Clip is now available for marketing, public relations and advertising managers in the green industry. It tracks references to company names, personnel, competitive products, etc. in more than 400 publications nationwide. For more info, call (619) 723-0255.

**STRATEGIC PLANNING**—James R. Houston's "Strategic Planning for Landscape & Irrigation Contractors" is now available through the National Landscape Association. Besides information about strategic plans, it contains sample reports, forms, statements and worksheets. The publication is available for \$45 to NLA members and \$54 for non-members. Send checks payable to NLA to: 1250 I St. NW, Suite 500, Washington, DC 20005.

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**(800) 233-7596**

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Freight or dealer prep;  
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Turf Products, Ltd.  
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Fisher & Son  
Company  
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Meadows  
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North Star Turf  
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## ...And get exactly what you need in a pre-emergent herbicide program.

Your DOTS distributor is no ordinary "stock" person, but rather a professional who deals with specialized formulas for your individual needs.

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Choose from high quality products including TEAM,<sup>™</sup> SURFLAN,<sup>®</sup> BALAN,<sup>®</sup> or BALAN<sup>®</sup>

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Just look for the red dot to know you're getting the best... from the best distributor. Contact your DOTS distributor today or call 1-800-345-DOTS.

D. O. T. S.<sup>™</sup>

Distributor's Own  
Turf Supplies<sup>™</sup>

# JOB TALK

## Unused space beautified in 14 days

**Creative landscaping can transform any space—even an abandoned loading dock—into a pleasing environment.**

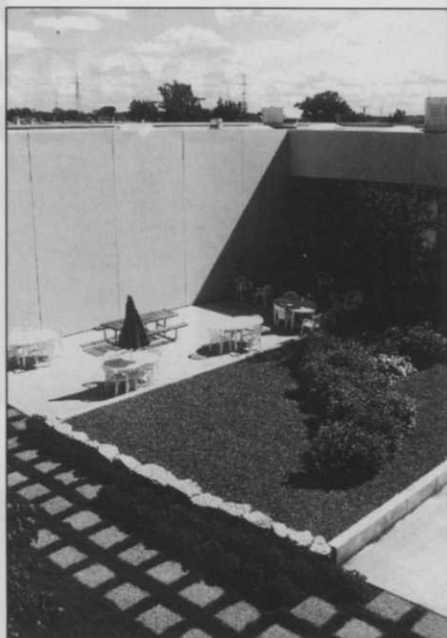
■ Tandem Landscape Company of West Chicago, Illinois, was recently given an Associated Landscape Contractors of America (ALCA) distinction award for its renovation project at Narco Elmhurst Centre in Elmhurst, Ill. But considering the project, the award could be renamed, 'Working miracles on short notice.'

The project developer, Nardi Group, Ltd., had awarded Tandem the design/build contract. Shortly thereafter, Tandem had to respond to an emergency renovation request to meet the needs of a prospective corporate tenant.

Nardi asked Tandem to transform the building's sterile,

asphalt loading dock area between two, U-shaped buildings into a lush, landscaped courtyard and patio, which would be an acceptable amenity for the tenant. The renovation was part of a total project by the developer to connect the two buildings before the new tenant's move-in date. To meet that schedule, the construction pace was brisk and the landscaping had to be completed in only two weeks.

The renovated



**The transformed loading dock includes four individual seating areas. Each seating area is separated by greenery and planter sections.**



**Tandem's design incorporated abundant greenery and bright clusters of seasonal flowers, combining both summer and winter colors.**

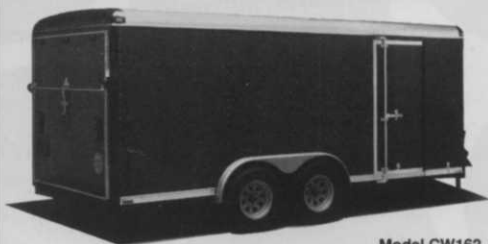
courtyard landscaping included four individual patio areas, stone walkways, trees and shrubs, annual flower beds and a complete irrigation system. The 22,000 square-foot courtyard acquired the ambiance of a small park.

"We are quite proud of this project," says Mark Sorrentino, Tandem president.

"With the timing complications aside," says Sorrentino, "the new courtyard became a beautiful and unique focal point for the office building. Combine that with the short two-week construction time, and we felt confident this project was of award-winning quality. Of course, the highest honor for us was being awarded the long-term maintenance contract for the tenant..."

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Model CW162

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Transport and store all your equipment with complete security. Protected from the weather. Great Options like: FLOW-THRU VENTILATION eliminates fuel fumes. WOLMANIZED 1 1/2" floors and 3/4" interior side walls for "guts". WIDE BODY, too. Hundreds of Models, Sizes and other Customizing Options. All backed by an EXCLUSIVE 3 YR. WARRANTY PROGRAM. Give us a call, today.

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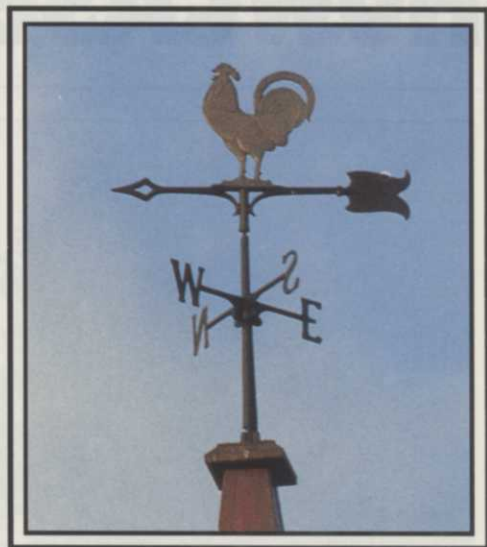
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N



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Because you never know  
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the wind will blow.

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

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

For more information, contact your Lebanon sales representative or local Lebanon Turf Products distributor. Or simply call 1-800-233-0628.



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S

# GREEN INDUSTRY SHOWCASE

## Tree spades dig deep for multi-service nursery

For more than 27 years, Greentree Nurseries in Allentown, Pa. has been carefully nurturing 250,000 trees as they mature on its six tree farms.

Tree farming is just one of Greentree's businesses. It offers to service wholesale and retail customers. It also provides industrial and commercial landscaping, seeding and sodding, irrigation systems design and installation, site grading and snow plowing.

Alex Tamerler, owner of Greentree, oversees this large and diversified company, which employs up to 80 people during the spring and fall seasons, and utilizes 40 pieces of large equipment.

One of the services the company offers as part of its landscaping business is transplanting large caliper shade trees to residential and commercial locations.

Customers select a tree, or trees, from any of the six tree farms. After the selection has been made, one of the company's four Vermeer truck-mounted tree spades is used to dig the tree.

The operator stands to the rear of the truck and operates the hydraulic controls, activating the spades and causing them to encase the tree, digging down below the roots and removing the entire root ball. The tree is then lifted hydraulically, with the root ball attached, over the truck and secured for transit.

Greentree owns a Vermeer 9400, three Vermeer TS 84s, 2 TS 60s and 18 other Vermeer tree-related products.

The 9400 can transport a tree with up to a 12-inch trunk diameter, and up to seven tons, including the dirt needed for the root system. It features spades made of alloy steel. There is a 450-gallon water tank attached to keep the spades wet while digging.

"Vermeer equipment is an integral part of our business," says Tamerler. "We rely heavily on the dependability of our tree equipment and the swift availability of Vermeer parts and service. Tree moving has become a large part of our business."

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Vermeer TS 84T tree spade removes a tree from the Greentree farm.



Vermeer TS 84T prepares to place the tree in freshly-dug hole at office complex.

The world's most popular handlebar trencher improved!

# You deserve better.

## And here it is.

Better than ever: the NEW 1020.

We just couldn't leave well-enough alone. So, we improved the world's best-selling handlebar trencher. We call it the 1020. You'll call it impressive, with three new clean, powerful engine options and other refinements making the 1020 easily the most productive, reliable, and easiest-to-use handlebar trencher you've ever owned.

It's time to raise your expectations about the world's most popular handlebar trencher. See the new 1020 today.

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## **Ditch Witch®**

*Finding New Ways.*

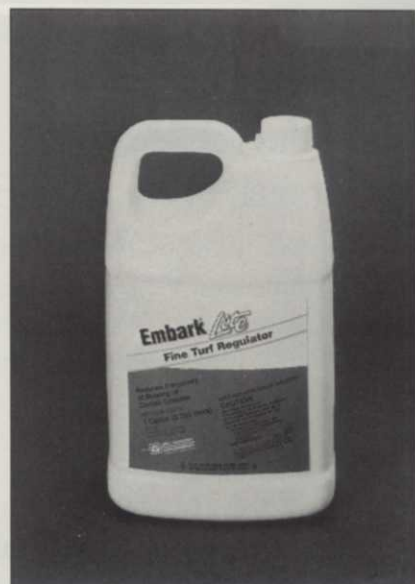
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## Turf regulator for easy clippings management

Embark Lite Fine Turf Regulator gives turf professionals a mefluidide formulation and product use directions for reducing clippings and/or mowings in highly visible, ornamental lawns.

Mefluidide is the active ingredient in Embark 2-S, a more concentrated product originally developed by the 3M Co. Embark 2-S will continue to be used to control turf-grass growth in roadsides and other rights-of-ways, airports, industrial sites, etc., whereas Embark Lite will be targeted to fine turf applications.



According to BASF, Embark Lite can make mowings more manageable for approximately four weeks during the peak growth season. More than one application may be made per season if spaced at least six weeks apart.

The length of control can be increased to about six weeks by increasing the rate and tank-mixing with an amine compatible liquid iron such as Ferromec AC.

Longer activity may also be achieved with maximum turf safety by tank-mixing Embark Lite with PBI's Limit Turf Regulator.

**Circle No. 192 on Reader Inquiry Card**

## THE WALKER TOUCH



**The Perfect Touch** Many operators are finding the mid-size Walker Mower is the perfect size for their jobs – a compact, maneuverable tractor for small areas, combined with open space productivity of a rider, saves time.

**The "Midas" Touch** Walker Mowers are moneymakers; one owner explained why he was buying a second Walker, "The first one made me money – I like to make money."

**The Finishing Touch** To please the most discriminating customer, Walker delivers a beautiful mowing job and with the exclusive GHS grass collection option, the turf is vacuumed clean and manicured.

*Ride a Walker*

### The Mid-Size Walker Line

- 3 tractor models from 11-21 HP with gas or diesel engines
- 3 mower deck sizes 36"-54" with grass collection, side discharge or mulching available
- 3 front mounted implements: snowblower, rotary broom and dozer blade
- 3 year warranty on maintenance free hydrostatic wheel drive

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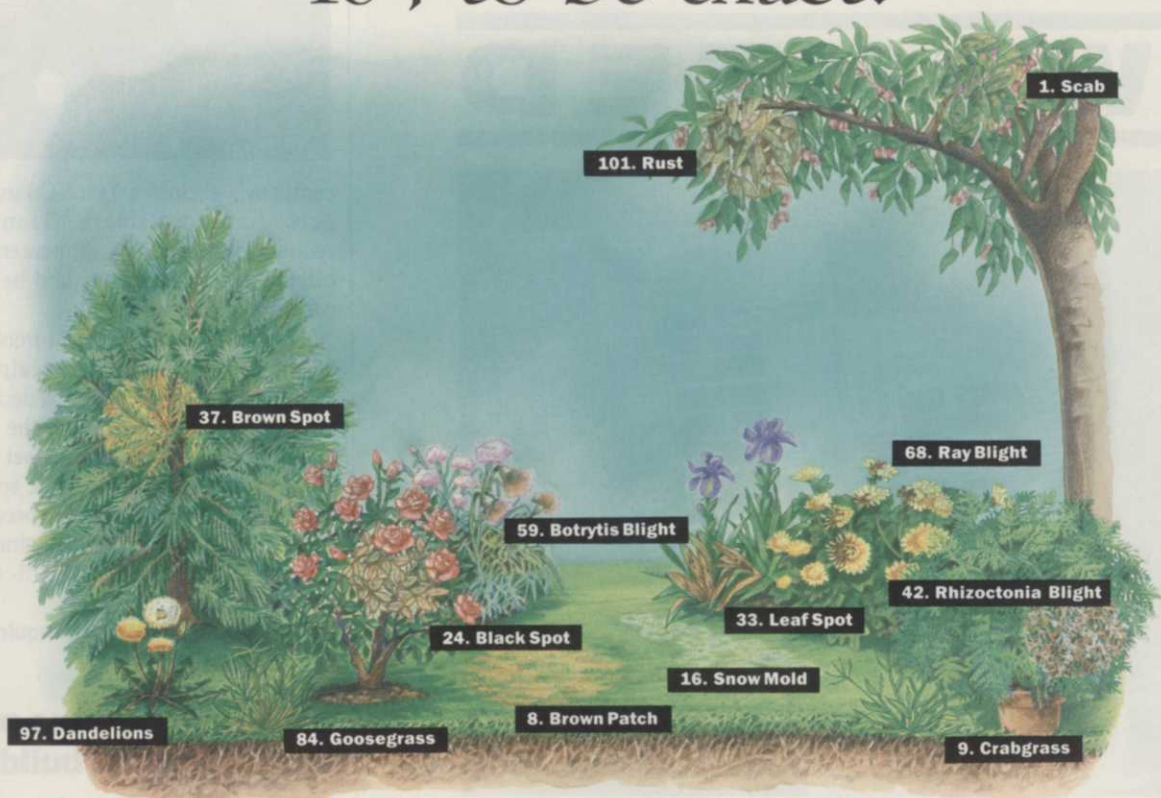
## Keep cool on the course with cab air cooler

The Course-Air evaporative cooler lowers the interior temperature of golf carts



by as much as 25 degrees. A high-velocity blower with directional vents projects a

# Use the Turf Care® Pros for any number of growing problems. 104 to be exact.



Professionals count on the Turf Care Pros. To treat diseases, Daconil 2787® is the cornerstone of your management program. The broadest-spectrum fungicide on the market, it controls 12 major turf and the major ornamental diseases. And there's never been a documented case of disease resistance to Daconil 2787.

For pre- and postemergent herbicide control of annual grasses and broadleaf weeds, it's Dacthal® and Daconate 6®. On pesky broadleaf weeds, use 2 Plus 2.

And round out your program using Frigate® with Roundup\* to control perennial and annual weeds. Together with Daconil, they all create a complete professional management program.

When it comes to turf and ornamental care, count on the Turf Care Pros. And count out diseases and weeds — 104 to be exact.



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

Always follow label directions carefully when using turf chemicals.  
\*Roundup is a registered trademark of Monsanto Company.

# PRODUCT REVIEW

cool stream of air on both passengers from an overhead panel.

Manufacturer Gem Top says the Course-Air is quiet and efficient, and runs off the golf car battery. Powered by a small, 12-volt motor, the unit is activated by a switch located in the ceiling of the

car; works on regular tap water.

The company says the Course-Air fits most any golf vehicle by use of a variety of roof frames available from Gem Top. It's made of weather-resistant polymers and can be painted to match the golf cart.

**Circle No. 193 on Reader Inquiry Card**

## Drive system reduces loads by 30 percent

The Exmark Turf Ranger combines high quality drive components with the



company's exclusive Trans-Guard system. According to Exmark, Trans-Guard reduces peak loads by 30 percent, which extends transmission life and helps avoid costly engine repairs.

Other features include out-front 60- and 52-inch full-floating, anti-scalp cutting decks. These extra-deep cutting decks deliver high-quality cuts even under the toughest mowing conditions, including wet grass. In addition, dampened hydrostatic speed control provides infinite, precise speed control and increases productivity. Engine options include the Kohler Magnum 18- or 20-hp twin-cylinder engines.

**Circle No. 194 on Reader Inquiry Card**

## Backhoe performs many landscape and build jobs

Kubota Tractor Corp. has added the BL4590 backhoe to its growing line of



implements designed for the versatile B- and L-Series tractors. It digs to a depth of 7.5 feet and has a force of 2950 pounds.

The unit is compatible with both front loaders and mid-mount mowers. A two-lever control provides smooth operation. Hydraulically actuated stabilizers help ensure top performance and operator safety.

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# WANTED



## for impersonating an expensive fertilizer

Natural organic **Terrene**, with its slow release, non-burning properties is showing up on turf professionals' "most wanted" lists everywhere.

The specialized Turf and Greens grades of new **Terrene** can be custom tailored to fit into any fertilizer program. Whether you're in lawn and turf care, golf course or landscape maintenance, nurseries, or any other related business, you'll profit from **Terrene's** growth potential.

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# Turf Blazers

## JUST BUILT BETTER



**LOOK** closely at two of the reasons we build them better.



The Double Wide Traction Belt is designed to provide extra traction in wet conditions.



Deck construction is 7 gauge side with 10 gauge top. Rounded Trim Corner makes close trimming a breeze.

Rugged and Durable, the Turf Blazer Commercial Rotary delivers day in and day out dependability. Provides high production and Increased profits for your business. See your Turf Blazer Dealer for a test drive on your turf.

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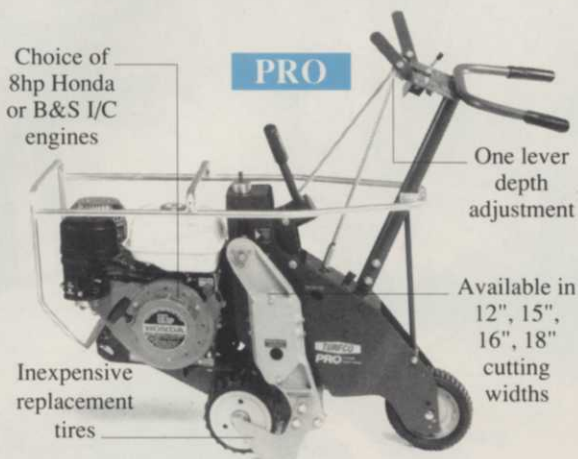
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# LOOKING FOR A BETTER SOD CUTTER?

*Turfco Gives You Two*



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**Turfco** introduces the newest idea in sod cutters: a choice. Choose the Turfco Pro or Pro Lite. Both have been redesigned for smoother running, simpler operation and lower maintenance costs. Now you can fit the machine to the job, instead of the other way around.

Turfco has shown our dedication to quality, customers' needs and innovative design by building rugged turf maintenance products that have been the better choice since 1953.

See the entire family of high quality Turfco products at your local Turfco dealer, or call 612 / 785-1000 for the dealer nearest you. Fax number 612 / 785-0556.

**TURFCO**  
*Simply Better.*

## SHOWCASE PRODUCT REVIEW

### Soil restoration system leaves surface intact

Terralift is a patented soil restoration system that works at depths of up to 36 inches without disturbing the turf surface.

Terralift allows for the injection and balanced distribution of dry fertilizers,



pesticides and soil enhancers without digging up soil.

The system uses a long narrow probe and high pressure. Forced air injected at a controllable rate fractures the subsoil with thousands of fissures.

Of prime importance is Terralift's ability to inject pelletized materials, such as perlite beads, to maintain passages for the exchange of liquids and gases, or other natural agents to accelerate the decomposition of organic matter.

Circle No. 196 on Reader Inquiry Card

### New corporate identity a graphics change only

Excel Industries, Inc. reminds the green industry that it continues to produce the Hustler line of out-front rotary mowers as well as the Excel Compact series, the Snow Track 440 and the exciting new 9400 UTR.

Excel has adopted new corporate graphics which are now being seen on Excel turf products.

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Amigo Tall Fescue from Medalist America. It performs so well in so many ways, you'll gladly call it "friend."

What Amigo can do is just short of amazing. In sun, in shade. In Northern states, in the mid-South. In Spring and late into Fall. At low or high fertility rates. On athletic fields, parks, institutional grounds, fine residential

# Amigo Tall Fescue Is Truly Turf Friendly.

lawns. Or for sod. Straight, or in Medalist America blends.

Amigo dwarf-type tall fescue consistently ranks at or near the top in key trials, including the National Turf Evaluation Program (NTEP) Tall Fescue Trials.

See how quickly Amigo can make friends in your turf program. Contact your Medalist America Turf Distributor.



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Locations in: Minneapolis, MN; Tangent, OR; Downers Grove, IL; New Brunswick, NJ

# PRODUCT REVIEW

## Verti-slicer attachments available in two sizes

Two models of the Turf-Tec Verti-Slicer are now available for quick aerifying without clean up.

The three-foot-wide model attaches to the Verti-Groove machine. The new model covers a six-foot area and is tractor mounted by a three-point lift.

The unit is specially designed to open turf by slicing five inches deep. No soil is

removed, but deep cuts in the turf allow air and water to penetrate down into the root zone.

The Verti-Slicer is the perfect machine to open up the turf on lawns, mounds and steep banks to make hard-to-water areas more receptive to water.

With the Verti-Slicer, turfgrass areas can be deeply sliced at any time of year, even when areas are in use.

**Circle No. 198 on Reader Inquiry Card**

## Lightweight trap sets easily for quick catch

The Wilco mole and gopher trap has been field tested for more than two years with thousands of quick catches.

The metal trap weighs seven ounces and is seven inches long. To operate, the trap is held in one hand and pointed downward. A squeeze on the handle automatically sets the trap.

**Circle No. 199 on Reader Inquiry Card**

## Zero-turn mowers now have mid-size partners

Grasshopper announces the addition of the Model 612 to its new 600 Series of mid-size zero-turn front mowers. The 612 and 614 set new levels of performance for mid-size zero turning-radius mowers in the 44- to 48-inch class.

Along with many other professional features, the Model 612 combines an advanced dual-hydrostatic direct drive system with a Briggs & Stratton 12.5 hp Vanguard engine. The air-cooled, gas, twin-cylinder OHV powerplant was developed to offer the operator improved efficiency and reliability.

The company reports that the hydrostatic direct drive system uses internal filtration and reservoir diaphragms for smoother, cleaner operation and extended service life.

Padded dual levers adjust to match the operator's arm length and put complete control of speed, steering, turns, braking and alternate forward/reverse motions in the palm of the hand. Control levers spread wide for easy-on, easy-off mounting and dismounting.

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**OREGON TALL FESCUE**  
**SEED FROM OREGON**

**Beautiful or Functional**

Have them both! Rich, green Turf Type Tall Fescue gives you the beauty you want with a minimum of care.

Excellent for lawns, play areas, parks, airfields, roadways, golf courses and industrial sites.

Proven disease resistant, Oregon Grown Tall Fescue seed produces an adaptable, weed free turf that not only persists through summers and winters, but maintains its beauty.

Insist on Turf Type Tall Fescue seed grown in Oregon.

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Phone: (503) 585-1157

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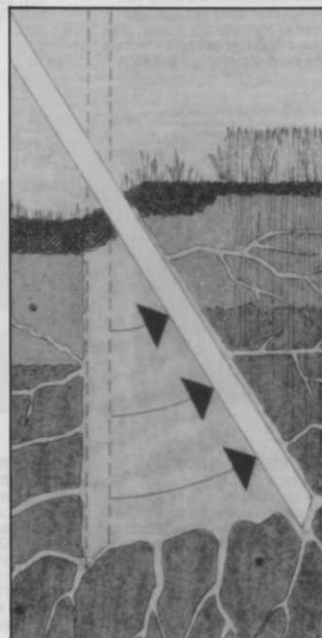
# BELIEVE IT OR NOT

**Only Verti-Drain® helps you grow bent grass roots as deep as 8 inches.**

Turf professionals are amazed to see how healthy and deep their root systems grow after deep tine aeration with Verti-Drain. Case study after case study worldwide shows root systems of fine grasses 8 to 10 inches deep, often through the black layer into the deep root zone.

In all sorts of applications Verti-Drain has saved greens, improved fairways, brought back sports fields, racetracks, restored high-traffic turf areas . . . even shown dramatic savings on water usage. All because it does one thing better than anything else on the market today—it promotes deep root growth. Customers say it works like a pitchfork actually pitching the tines forward, heaving the soil and creating new pockets for air and water without scarring the surface. There's no other machine like it. And only Verti-Drain can pull cores up to 12 inches deep and solid tine up to 16 inches deep.

Whether you're into hollow tining or solid tining, there's a Verti-Drain model to fit your needs and budget. Deep tine aeration with Verti-Drain can answer your compaction and drainage worries. Now you can have better turf, believe it or not.



The patented Verti-Drain design permits tines to pivot back and forth while penetrating as deep as 16 inches into the soil. A lifting-shattering effect occurs similar to the action of a pitchfork. The results are improved drainage and deeper, stronger healthier root systems.

A Verti-Drain user in Virginia sent us proof of his unusual bent grass results. After aerating he found root-bound holes like this with healthy, white roots growing well past the black layer. It convinced him of the benefits of deep tine aeration. If it works this well for him, think of what it can do for your turf.

No matter what your aeration productivity and depth requirements are, Verti-Drain has a model and the attachments to meet your needs. Call or write today for more details and the name of a dealer near you.

250 Model—  
16 inches deep

145 Model—  
12 inches deep

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10 inches deep

200 H Model—  
16 inches deep

Pedestrian Model—  
6 inches deep



**VERTI-DRAIN®**  
*Works like a pitchfork, only better.*

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# BOOKSTORE



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by Gregory M. Pierceall  
An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **\$55.95**



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by Shurtleff, Fermanian, Randell  
New comprehensive guide provides the most up-to-date information available on the identification, biology, control and management of every type of turfgrass pest. **\$48.95**



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by Howard Sprague  
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by A.J. Turgeon  
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**630 - TURFGRASS: SCIENCE AND CULTURE**  
by James Beard  
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **\$54.95**



**110 - TURF MANAGERS' HANDBOOK-Second Edition**  
by Daniel and Freeborg  
**ENTIRELY UPDATED.** A practical guide for the turf practitioner. Chapters on grasses, growth regulators and diseases have had extensive modification. Innovations resulting from research and practice have been added to reflect the current techniques available for turf managers. **\$32.95**

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The term "labor-saving device" might have been coined to apply to the Polaris Big Boss. It's your worker of choice when human hands, arms and backs aren't quite enough, but a pickup or dump truck is too much. And it's a terrific recreational vehicle as well, able to haul an entire campsite in a single trip, or supply a remote hunting cabin with food and equipment for a week. For farms, construction



sites, back yards, or the back woods, a Big Boss gives you the extra strength you need to do what needs to be done.

Warning: ATV's can be hazardous to operate. For your safety: Never carry



passengers, avoid excessive speeds, and be particularly careful on difficult terrain. Polaris ATV's may not be ridden by people under 18 years of age. Polaris recommends that all ATV riders take a training course. For safety and training information, see your dealer or call Polaris at 1(800)328-9975. (In MN, 1(800)247-6670).

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

**TURF SPECIALIST:** Experience in the application of lawncare materials desired. Commercial applicators license and good communication skills a plus. Competitive hourly wage/full benefit program. For more information call 215-368-9333 or send resume to: P.O. Box 249, Kulpsville, PA 19446. 2/92

**CITY OF URBANA JOB ANNOUNCEMENT: CITY ARBORIST.** The City of Urbana's Public Works Department is looking for a qualified individual to fill the position of City Arborist. The person who fills this position will be responsible for the administration of the City's tree planting and maintenance program, supervision of divisional staff, administration of the Arbor Division budget, including special funds, and administration of the City's tree ordinance and standards and special projects. Interested candidates should hold a bachelor's degree with emphasis in forestry, ornamental horticulture, or appropriate biological science and three (3) years of work experience in arbor management. To apply, please submit resume, an introductory letter, salary history and expectations to: Ronald Gremore, Personnel Manager, City of Urbana, 400 South Vine Street, Urbana, IL 61801 before February 28, 1992. EOE. 2/92

**OPERATIONS MANAGER/SUPERVISOR:** Small growing maintenance company in Central Florida looking for an experienced hands-on manager, with future move into management. Excellent growth opportunity for right person. Salary, benefits plus bonuses. Come grow with us. Send resume to P.O. Box 878, Oviddo, FL 32765. 2/92

**LAWN CARE SPECIALIST - INTEGRATED PEST MANAGEMENT SPECIALIST:** Collier Arbor Care, Portland, Oregon, Since 1937. An industry leader in I.P.M. Two career positions available for outstanding individuals with 2-4 year Horticulture Degree. Minimum of two years experience in tree/shrub/lawn care. Candidates must be committed to highest industry standards of workmanship, safe work practices, and customer service. Excellent communication skills, sales ability. Excellent benefit package. Salary commensurate with experience. Send resume to: 9032 Southeast Division Street, Portland, Oregon 97266. 2/92

Innovative firm seeking Plant Health Care Director: Candidate should have an undergraduate degree, or equivalent, and in-depth knowledge of arboriculture and lawn care. Salary commensurate with experience. Send resume to: Mike's Tree Surgeons, Inc., 263 Park Street, Troy, MI 48083. 2/92

**BRANCH MANAGER:** For large southeast regional landscape maintenance contractor. Must have 3 years experience running a \$1,000,000 + branch. Must possess good operational and customer service abilities. Excellent salary and benefits. Send resume to LM Box 488. 2/92

**LANDSCAPE MAINTENANCE SUPERVISOR:** For multi-million dollar Florida landscape company. To handle field supervision for up to 5 crews. Knowledge of southern horticulture preferred. Salary + benefits. Send resume to: Mr. S. Khalsa, 1174 Florida Central Parkway, Longwood, FL 32750. 2/92

**GROUNDS MAINTENANCE/LANDSCAPE/LAWN CARE-** Expanding grounds management firm in Cincinnati and Columbus seeks qualified and experienced personnel to fill openings in Grounds Maintenance, Landscape Construction, Lawn Care, Irrigation and Flower Care. Quality conscious individuals knowledgeable in ornamentals, turfgrass, landscape installation, lawn mowing, irrigation service, pest management and flower care should respond. Outstanding compensation, year round work, benefits and advancement opportunities available. Letter or resume to **PRO-LAWN PROSCAPE**, 11488 Deerfield Road, Cincinnati, Ohio 45242; Attn: Clayton Sheeler. (513)489-2433, days. 2/92

**LAWN CARE BRANCH MANAGER:** Well established major company expanding in midwest and eastern cities desires ambitious, hands-on branch manager. Must have successful telemarketing experience in lawn care and be able to motivate both telemarketing and production employees. We care about our employees and offer high salaries and good benefits. Please reply to LM Box 474. 3/92

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## FOR SALE

**PIPE LOCATOR INEXPENSIVE!** Locates, traces underground drain, water pipe lines of clay, PVC, ABS, steel, cement. Finds sprinklers, valves, clogs. Bloch Company, Box 18058, Cleveland, Ohio 44118. (216)371-0979. TF

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**NEW AND USED BROUWER EQUIPMENT:** Mowers - VACS - Fork Lifts - Harvesters - and full line of replacement parts. Contact Ed or Glenn Markham at 1-800-458-3644. TF

JACOBSEN HF 15 Diesel, self propelled, hydraulic driven 7-gang fairway units; sharpened, lapped and ready for use. New paint, transmission recently overhauled. \$5,500, photo's available. Greenlawn Sod Co. (303)482-6574. 3/92

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## EDUCATIONAL OPPORTUNITIES

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**NEW and USED EQUIPMENT--**Asplundh, Hi Ranger and Lift-All Forestry Bucket Trucks, Chipmore Wood Chippers. Mirk, Inc., (216)669-3567, (216)669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

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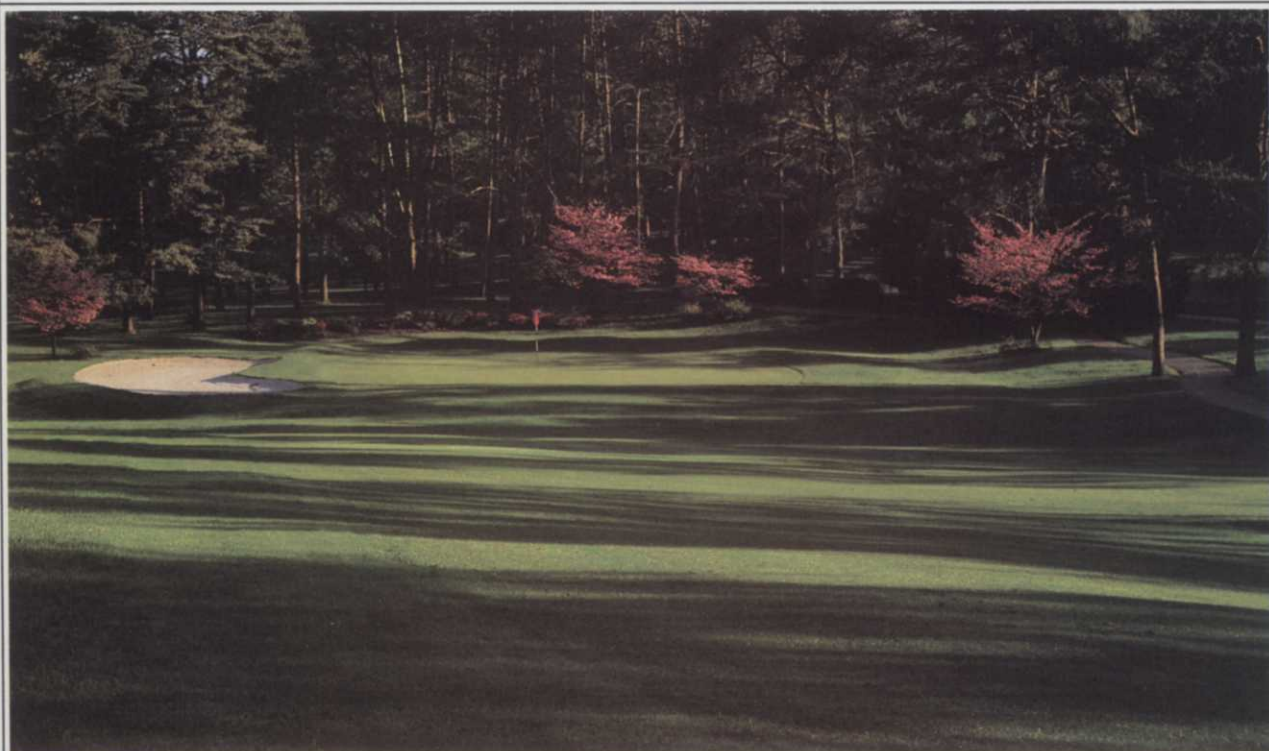
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