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Landscapes often spoiled by so-called progress

They're widening Route 82—a major east-west road out where I live—to accommodate a shopping mall that's being built in a neighboring city.

It's a two-lane road, too narrow for the heavy east-west traffic, even without the mall. The project is nearing that section of the road I use for my daily commute, so now I have to find a way around the construction.

The Cleveland Metroparks will be my Rock Island Line, my B&O, my Union Pacific! I'll head south about half a mile, catch the parkway going west, and then double-back to where I usually pick it up off of 82.

The Cleveland parkway system—also known as "The Emerald Necklace"—is a blessing. There's no better way to get to work than a drive through turf- and treelined roads, with an occasional deer sighting or goose-crossing. For the next few weeks I can still see through the bare trees and trace the contour of the inner forest.

The comparison between noisy construction and serene park land brings to mind how we're constantly building and expanding, as if we just can't leave the land the way it is. Recessions or "housing downturns" notwithstanding, we're always adding on.

When I moved to my current home, I thought I had found a refuge from heavy traffic and construction. Now, there's an increasing amount of commercial building going up in what, for years, had been open land. City council wants to rezone some sections for still *more* commercial property. They say it will help keep taxes and sewer rates low and increase property values and competition. (But wait a minute. Don't *higher* property values mean *higher* taxes?)

Progress, schmogress! Yes, that road should be widened, shopping mall or no shopping mall. But it's not progressive nor is it competitive—to have a Super K-Mart or other multi-million dollar chain store set up shop to crush small entrepreneurs with unfairly low prices. And there's not much a landscaper can do with acres of asphalt parking lots.

Just as the new construction is a sign of spring, so are the tulips I planted last fall, which are now in bloom. They're a bright spot in an otherwise unremarkable landscape around my condo development. The parking lot is starting to crack in spots, less than a year after it was resurfaced. It looks to me as if the people who spend our maintenance fees went for the notorious low bid, and I don't like it!

Vandals recently ruined the basketball assembly on the condo grounds. Twice the supporting post was badly bent, twice repaired. Then the senseless Huns broke it clean in two.

A new one's being installed; let's hope it stands the test of time.

Which brings me to my car—which has certainly stood the test of time. Soon I'll need another one. My Pontiac's on its 106thousandth mile, and rust is finally doing it's hungry best on the body. It needs a fuel pump, the heater's busted and there's an oil leak that wants plugging.

My dad found that car for me. He spotted it while strolling by a dealership at a time when my Chevy was on extended life support. It's been a good ride for five years, and soon the ride will end. But at this point, I don't know what I'll end up buying.

Hmm...maybe an earthmover...

Demy The Jan



COVER STORY

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Young Republicans open the way for pro-business legislation that had been blocked or buried in four decades of liberal and activist control. This six-page Special Report fills you in on the bright future that appears to be looming on the green industry horizon.

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Joe Alonzi Westchester Country Club Rye, N.Y.

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Charlie Racusin Environmental Ldsc. Services Houston, Tex.

Jack Robertson Robertson Lawn Care Springfield, Ill.

Steve Wightman Jack Murphy Stadium San Diego, Calif.



EDITORIAL STAFF-Fax: (216) 891-2675 JERRY ROCHE, Editor-in-Chief: (216) 826-2830 TERRY McIVER, Managing Editor: (216) 891-2709 RON HALL, Senior Editor: (216) 891-2636 LISA BODNAR, Graphic Designer: (216) 891-3101 MAUREEN HREHOCIK, Group Editor: (216) 826-2829

BUSINESS STAFF-Fax: (218) 891-2675 JOHN D. PAYNE, Publisher: (216) 891-2786 JUDY MIDUCKI, Production Manager: (218) 723-9281 ALEX DeBARR, Group Publisher: (216) 891-2789 ROSY BRADLEY, Senior Production Manager: (218) 723-9352 DEBI HARMER, Production Director: (218) 723-9325 LESLIE MONTGOMERY, Administrative Coordinator: (216) 826-2856

ADVERTISING OFFICES

CLEVELAND (HEADQUARTERS) OFFICE 7500 Old Oak Blvd Cleveland, OH 44130 Phone: (216) 243-8100 Fax: (216) 891-2675 JOHN D. PAYNE, Publisher: (216) 891-2786 ROBERT OHLSEN, National Sales Manager: (216) 891-2682 DAVID MIETHKE, District Sales Manager: (216) 891-2753 STEPHANIE STIGGERS-SMITH, Classified Ad Mgr.: (216) 891-2719 LESLIE MONTGOMERY, Admin. Coordinator: (216) 826-2856 SEATTLE OFFICE 1333 N.W. Norcross Seattle, WA 98177

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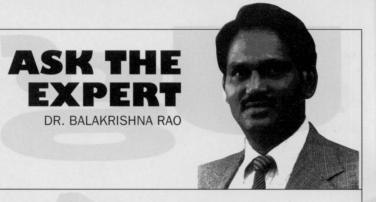
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Sandburs a prickly problem

Problem: In the past year I have taken over the landscape management of two cemeteries that are plagued with grass burrs or sandburs. The problem gets worse the more I mow them. The soil is sandy-clay and slightly alkaline. We do not fertilize due to budgetary constraints and the frequent mowing. (*Texas*)

Solution: It is not clear what kind of sandbur you are dealing with. A USDA book, "Common Weeds of the United States," mentions field sandbur—also known as burgrass (*Cenchrus incertus*), Southern sandbur (*C. echinatus*) and longspine sandbur (*C. longispinus*).

You may be dealing with all three species. However, since you mentioned grass burrs, I believe you are dealing with the field sandbur, or burgrass. Field sandbur is an annual or biennial grassy weed, with spiny burs. It produces flowers along a spike, with spikelets enclosed in spiny burs. The burs produce between one and three straw-purple colored seeds from June to September.

Since the plant can grow close to the ground or upright, short mowing or repeated mowing will not help to manage the problem. Mowing at regular intervals and bagging the clippings might help minimize the problem from a cultural standpoint.

Your best option in managing sandbur is to use herbicides such as Surflan, Snapshot or Acclaim. Repeat applications as needed, but make sure these products are labeled for your particular turfgrass.

Controlling sprouts on cut stumps

Problem: What is the best way to get rid of sprout growth from cut stumps? A number of trees and shrubs produce these sprouts after having been cut. Is there any danger in using chemicals to prevent this growth? (Michigan)

Solution: Cut stumps often produce sprouts after the trees or shrubs have been removed.

To prevent this growth, apply herbicides such as Roundup, Garlon or Tordon—either as concentrate or diluted to 50 percent with water mixtures. Soon after cutting the plants, apply directly onto the cambium layer. One application is normally enough.

Utility arborists use either Garlon or Tordon for stumps. Tree care arborists generally use herbicides such as Roundup.

The above herbicides may adversely affect plants of the same species that have a root graft with the treated stump. In these situations, the treatment may not kill the plants grafted to the treated stump, but may cause injury. These treatments may also help manage sucker growth produced from roots.

Rain or overhead irrigation can wash the herbicide from cut stumps, thus reducing its effectiveness. Another caution is that if Tordon or Garlon washes from the application site, it can be absorbed by roots of non-target desirable plants adjacent to treated cut stumps.

Make sure that you are licensed to use these herbicides and have the proper pesticide licensing category to treat cut stumps.

Try bait products for rodent control

Problem: We have had serious problems with mice and voles chewing the bark of low growing (groundcover) juniper plants. We have used chemical baits, with some success. Any other suggestions? (New York)

Solution: Rodents present a serious problem in landscapes. They chew the bark of plants at the ground level.

This problem is particularly severe if there is too much mulch around the base of trunks. Rodents, like mice and voles, will be active under thick groundcovers, such as juniper. This problem would be fairly common during winter months.

Using bait would be the most effective and practical method of managing them. Place bait stations where there is the most rodent activity, and check them periodically. Since you have had limited success with bait stations, make sure you are indeed dealing with rodent problems or something else.

Sometimes these problems may be related to slugs and/or snails. Even in this case, bait stations are the best solution.

Another potential cause of the problem is low temperature injury. Junipers, particularly a variety called 'Andora,' are very sensitive to basal bark splitting and bark peeling.

Check and see whether this is the problem. Unfortunately, not much can be done to prevent this. Improve drainage, provide proper mulching and fertilize as needed.

You could also look into the feasibility of trapping these rodents in addition to the baiting method. With all these efforts you should take care of those difficult to control pests.

Treat dogwood borers in early May

Problem: Please give recommendations for controlling borers on dogwoods. (New Jersey)

Solution: Wherever dogwoods are being grown, borers are usually a major problem. At least seven kinds of borers can attack dogwoods. The most destructive among these are the flat-headed borer, *Chrysobothris femorata*, and the dogwood borer, *Synanthedon scitula*.

To control these, treat the trunk and lower branches with insecticides, such as Dursban, during early May, and repeat applications three times at three-week intervals. Read the label and follow directions.

Keep the plants under good care by watering and fertilizing as needed to improve vitality.

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

Mail questions to "Ask the Expert," LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130. Please allow two to three months for an answer to appear in the magazine. MOST PEOPLE ARE ECSTATIC AT HOW EFFECTIVE CONFRONT IS AT MAKING THEIR BROADLEAF WEEDS DISAPPEAR.



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A CAPITOL DECA With the first 100 days of the Republican party's "Contract With America" nearing completion, LANDSCAPE MANAGEMENT magazine sent Cleveland-based business and issues writer Tom Johnson to Washington to survey the landscape and report back on what drastic changes in the direction of the federal government might mean to our readers. Johnson, a former editor of Pest Control magazine, interviewed industry association officials, Congressmen and federal officials in preparing this report. Is your business world about to change for the better? Read on.



Big winner in new 'American revolution' is small businessman

Young Republicans open the way for pro-business legislation that had been blocked or buried in four decades of liberal and activist control.

by Tom Johnson

It was the best of times. When the 104th Congress was gaveled to a close on April 7th, 100 days of Republican leadership in the U.S. House of Representatives and Senate had changed the way America is governed.

The consensus opinion is that one big winner in this typically bloodless American revolution is small business—in particular, small businesses most tormented by the regulatory excesses that have ranged from the harmless and ludicrous to the repressive and expensive.

For the green industry, the promise of relief is in the air. If the Senate follows the "take-no-prisoners" lead of the House, and Congress has enough clout to override Presidential vetoes, you can look forward to legislation that means a sunnier business climate ahead.

Among them:

• Incentives for small business worth billions of dollars, including better estate tax exemptions, a 50 percent capital gains tax rate cut for individuals (25 percent for corporations), and a higher limit on equipment and structure write-offs.

• A regulatory relief package—the Job Creation and Wage Enhancement Act; the Regulatory Moratorium Bill; the Private Property Bill; the Risk Assessment and Cost Benefit Bill (a direct attack on the Environmental Protection Agency and the Occupational Health and Safety Administration); the Paperwork Reduction Act and the Regulatory Flexibility Bill.

• Judicial limits to punitive damages that juries can award, and restrictions on business liability.

Last November's elections resulted in wholesale changes that stripped a generation of older, mostly liberal committee chairmen from the Congressional roster. Patrick Leahy (D-Ver.), the liberal who controlled the Senate Agriculture,

COVER STORY

Nutrition and Forestry Committee and stifled attempts at pesticide legislative compromise, has passed the chairman's gavel to the Republican Richard Lugar (R-Ind.).

Educating freshmen Congressmen on pesticide issues is one of the daunting tasks that faces the green industry.

Six weeks ago in the Washington offices of Responsible Industry for a Sound Environment (RISE), executive director Allen James had taken on the fatigued look that enveloped Congressmen and lobbyists alike in the nation's capital as legislation moved with lightning speed through the corridors of power.

James was working nights to keep track of scores of bills and regulations that could affect the green industry. He wasn't feeling overly optimistic that the Republican "Contract With America" had yet done anything for specialty pesticides.

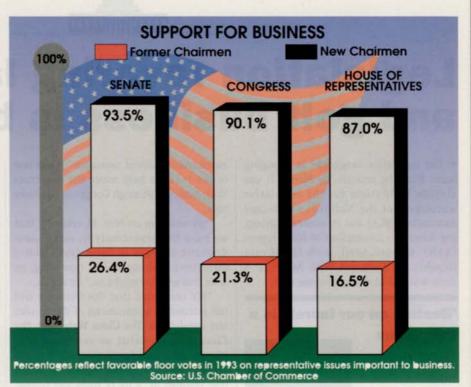
"I would have to challenge the assumption that things have turned completely around. Very few bills have started moving that will have an impact on our industry," he says.

He has other misgivings. The industry could well win the battle at the federal level, and still find itself hobbled as activists take their battles to the states, where legislators aren't as well educated in the intricacies of pesticide technology and don't have as much time to consider legislation.

His federal legislative laundry list will take considerably longer than 100 days to wash. Here are the top two:

1) FIFRA—In a nutshell, lawmakers are preparing to rewrite the nation's pesticide laws. The troublesome Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) will be under review this year. House subcommittees will see it in the late spring, and action will commence on the "everything is a carcinogen-zero risk" Delaney Clause of the Federal Food, Drug and Cosmetic Act (FFDCA) in the House Commerce Committee. Left unchallenged, enforcement of the Delaney Clause could strip the green industry of necessary pesticides.

H.R. 1627 was introduced last year in the House by Rep. Roy Rowland, (D-Ga.), Rep. Richard Lehman (D-Calif.) and Rep. Tom Bliley (R-Va.). Bottled up in Democrat-controlled committees in the last Congress, the legislation would establish a "negligible risk" policy, diluting the Draconian theoretical risk levels established by the EPA. It would also speed up



the review and cancellation of suspect pesticides, allowing older, theoretically riskier pesticides to be removed from the market to be replaced with newer, "less risky" pesticides.

Even the EPA wants FIFRA amended to drop Delaney and replace it with some

form of negligible

risk legislation. It

is putting pressure

on Congress to reform FIFRA with

the announce-

ment that it plans

extended list of

pesticides marked

for review under

the EPA to snipe

at the bill, and

small groups of

James expects

release an

to

Delaney.



Allen James has loads of political 'laundry' ahead.

Democrats want to water down the negligible risk language. He isn't counting on the bill coming out the way it was written.

Other hurdles? James fears that President Clinton will veto the bill "if it goes too far in helping an industry like ours."

2) Clean Water Act—Reauthorization of this law, a centerpiece of activist policy as originally proposed, would force mandatory reductions in what technicians call non-point source reduction (run-off) from urban areas. RISE and allied organizations are working with the new Republican majority to fold industry concerns into less stringent legislation.

Enforcement would mandate pesticide reduction, James warns, "when in fact, the detections of our products are not really an issue of concern for water quality. The fact is that there is little contamination of waterways from urban areas.

"Our objective," he says, "Is to remove those mandatory requirements, and to make certain that, when passed, the act does not include enforcement language. The goal is to prevent legislation that would inadvertently continue to over-regulate our industry."

"In the past," James continues, "we were trying to stop legislation that would absolutely have harmed our industry. It was easy to see the problems." Now, he says, RISE has to see that well-intended legislation "does not unintentionally hurt our industry."

Even with friendlier faces in the committee rooms, the lot of the pesticide lobby is not going to be an easy one. James cautions that "legislative reform is not going to happen overnight. I see a lot of negotiation and education, and the final result will still require compromise."

Landscape Management, May 1995 9



Legislation favoring landscape and golf business is blooming

The legislative landscape is changing faster than the seasons. By March, it was already springtime for the legislative watchdogs of the National Landscape Association (NLA) and its umbrella group, the American Association of Nurservmen (AAN). By mid-April, with the House Republican "Contract With America" a done deal, the bloom was on the rose.

'Resting on our laurels is a

dangerous thing right now.'

"This is the window of opportunity we have for legislation beneficial to the landscape businesses," says Ashby Ashby P. Ruden P. Ruden, the new



administrator of NLA. "Resting on our laurels is a dangerous thing right now. The representatives who have moved in are going to take some nicks and chips, and we have to make sure we don't take too many of those nicks ourselves."

For green industry business interestsgolf maintenance included-optimism is growing like a weed.

What has the first 100 days of the Republican "Contract With America" done for the green industry? The AAN was an early member of a powerful business lobby called "Project Relief," a brainchild of House Majority Whip Tom DeLay (R-Tex.) and a strong marriage of business interests and the Congress.

"It's a textbook case of how you can move things when things need to be moved," says Ben Bolusky, director of government affairs for the AAN and its 2,300 members.

Certainly the November elections were the catalyst in shifting priorities and focus around, particularly on the House (of Representatives) side. "Project Relief" helped keep the pressure on with coordinated and consistent messages. "It was one of the tools to help move the 'Contract With America' through Congress," Bolusky says.

"We woke up on Nov. 11 realizing that we have the opportunity to make some dramatic changes in the nation's policy directions. Nobody knows how long, or wide that window might be," he warns.

"We recognize that the Contract will not remove or eliminate all of these rules and regulations. The Clean Water Act, the Clean Air Act-what we see is just nibbling around the edges."

Bolusky decries the legislative trend that resulted in "a lot of rules and regulations that are unnecessary, or may have been propelled by the bureaucracy, that really don't get the job done. There's a point of diminishing returns at which legislation becomes very expensive with limited benefits."

The traffic jam of laws had become so intense in recent years, Bolusky said, "that laws became duplicative and contradictory. To comply with one Clean Water Act regulation, you can find yourself in violation of a wetlands regulation."

'We have the opportunity to make some drastic changes.'

Bolusky's goal? "We would like to see environmental rules and regulations -in terms of water, pesticides, and air-that achieve what they Ben Bolusky were meant to



achieve without exacting a toll on business," he says.

Together with the Minor Crop Farmer Alliance, AAN has worked to solve the minor use pesticide problem that goes along with the reauthorization of FIFRA (the Federal Insecticide, Fungicide and Rodenticide Act whose 1988 amendments set a date of 1997 for the re-registration of minor use pesticides).

The legislation would streamline the EPA pesticide registration process, and provide incentives for the chemical manufacturers to maintain and develop new products.

However, because of the high cost of EPA pesticide registration, it may make good business sense in some cases for manufacturers to simply remove minor use products from the market because of their limited sales potential. "Minor Use" is usually defined as any crop other than corn, wheat, cotton and soybeans, based on volume of pesticides used.

With fresh help in Congress, AAN and its allies have reintroduced last year's Minor Use Pesticide legislative package, designed to inject some flexibility into the EPA's registration system, and to provide incentives for chemical manufacturers to continue marketing the pesticides necessary to the green industry.

Here are other top current issues supported by the AAN that affects the industry:

Repeal of the Davis-Bacon Act: This Depression-era law has artificially inflated wages on federally financed projects, including landscaping. The Congressional Budget Office projects that outright repeal would save the country over \$3 billion.

Immigration: A section in proposed stricter immigration laws would impose stricter sanctions against employers who employ unregistered aliens. Because landscape and related businesses often depend on seasonal labor. Passage may serve to deplete an already tight labor pool, driving up costs.

Clean Water Act: The bill sets up voluntary state standards for non-point source pollution (run-off). It also addresses wetlands, where it offers opportunities for landscape contractors as part of wetlands fill and restoration projects. (Friends of the Earth has targeted this bill for activist attention, warning Congressmen continued on page 12

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WOODSE

COVER STORY

Help wanted...

• Even with the best intentions in the world, our trade associations in Washington say they can't win these legislative battles alone. Director Ashby Ruden of the National Landscape Association wants your help.

"There are people out there who have specific areas of expertise. I would love to see them plugged into their relevant interest areas in AAN," she says.

"For instance," she suggests, "a landscape company involved in wetlands reclamation would be an asset to the AAN water management task force. Tell your readers to get in touch with me if they would like to volunteer."

Ruden says she's aware of the enormous demands made on people in the green industry, but promises that, "when we ask for that involvement, we can streamline it so that it isn't burdensome, but a real opportunity."

If you agree that 1995 is a rare chance to make a difference, and you can help, get in touch with Ruden or Ben Bolusky at:

American Assn. of Nurserymen 1250 I St., N.W., Suite 500 Washington, DC 20005 Voice: (202) 789-2900 Fax: (202) 789-1893

New common-sense laws on the horizon?

Is it true? Are legislators like Rep. Pombo really going to break up the

logjam of stupid regulations?

Perhaps no one in Washington illustrates the changes in Congress that will affect the green industry better than



second-term Rep. Richard W. Pombo (R-Calif.). A fourth-generation San Joaquin County rancher, Pombo represents some of the state's richest agricultural lands.

He is a member of the House Agriculture Committee and the House Resources Committee. His subcommittee assignments cover specialty crops and water policy among other things, and he has been named chairman of the task force charged with the reauthorization of the Endangered Species Act.

He is one of the co-founders of the San Joaquin County Citizen's Land Alliance, a group of farmers and property owners who advocate private property rights, and fight attempts by government to strip these rights away from citizens. Such alliances are a rapidly growing national movement.

Pombo is a new kind of activist: a crusader for common sense in government. "The majority of my work has been on environmental laws—EPA or Fish and Wildlife or the Department of the Interior in general," he notes.

"We're trying to instill common sense into what they're doing and trying to rein in those federal bureaucracies. We're going to accomplish a lot in the next two years. You're going to see a major breakthrough in the regulatory jam. Some of the crazy things they expect people to abide by are going to end," he predicts.

"Once they have to justify their rules and regulations, it's going to break down a lot of the things they're doing now."

Take the reauthorization of FIFRA, the Federal Insecticide, Fungicide, and Rodenticide Act, which Rep. Pat Roberts (R-Kans.) believes Congress will get out of committee by the August break.

Now that the agriculture committee is in the majority, it's trying to make sure that legislation actually works in the real world. "And the need to have input from industry is more important that it ever was," Pombo states.

Where the Delaney Clause, the zero-

LEGISLATION from page 10

that they risk the wrath of their constituents by trying to weaken it, and calling on Congress to reject changes).

□ Ergonomics standards: This innocuous-sounding OSHA-backed package would force employers to adopt equipment and work practices designed to alleviate such problems as back strain or carpal tunnel syndrome. It would address workplace conditions where bending, stooping, lifting or using forceful finger exertion are required. There would be penalties. To quote Bolusky, "This one will hit the nursery and landscape business in the head with a two-by-four." □

risk anti-pesticide law that threatens to remove a score of effective pesticides from market is concerned, he is particularly intense. "The whole concept of cost/benefit and risk management, and that applying that concept to the use of pesticides is extremely important," he says. "Being a farmer, that's what I'm most passionate about. No farmer applies any pesticides they don't have to. What you do put on, you want to work."

Within the realm of government antipesticide legislation, Pombo says that, "Some of the EPA decisions and those of other agencies have not exactly made a lot of common sense."

He thinks he knows what happens to turn bad ideas into burdensome legislation. "What happens now is somebody inside Washington or a university comes up with what sounds like a good idea. Because Washington is political, if they can make it sound good, they can pass it, whether or not it works in the real world."

He believes an important key to successful pesticide legislation is to require that applicators be educated.

"They have to know what they're putting on, what the risks are and the proper way to apply the chemical," he states. "If they're educated, and the production of chemicals that are out there is safe, we can eliminate 99 percent of the risk. A lot of the scare tactics can be taken away just by doing that. There is legislation we are working on right now that would accomplish those goals," he says, with evident satisfaction.



Are activists headed for all 50 states?

While the attention of the nation is riveted on Washington, where 100 days of intense Republican legislation are making a huge dent in 40 years of liberal government, activist coalitions are already hard at work on Plan B—a stepped-up attack on pesticides and applicators at the state level.

Compared to Washington, it's a cherry-pick. At the state legislative level, overworked legislators meeting in short sessions have shown an alarming tendency to cave in to strident activist demands to curb pesticide use.

RISE executive director Allen James admits the state battlefield can be tougher than Washington, because, he notes, "Legislation at the state level is moving faster, and is more likely to be enacted before we can do anything about it. We have to be alert and quickly responsive."

The tide of issues is rising, swirling around buzzwords that activists believe can win strong public support, such as school IPM, banning herbicides in roadside spraying, and a welter of notification laws.

Allan Noe, RISE's director of state affairs, would like some help from the bleachers.

"It would be great if your readers would shed their apathy when they see and hear of legislation of this nature," he observes. Here's Noe's state-by-state list of the most dangerous state legislation out there, together with his commentary (in *italics*):

CALIFORNIA S. 929—Prohibits new use registration

for extremely hazardous pesticides.

The problem here is that "extremely hazardous" is extremely hazardous by the definition of enviro-senator Nicholas Petris. One subtlety in Petris' bill is that it goes back and captures other pesticides on his list after the bill's enactment date. This bill surfaces periodically, an annual event in the California legislature.

S. 1287—Study to identify estrogen-imitating compounds and effects on humans.

Another hardy California perennial. Reintroduced this session by activist Sen. Tom Hayden after its defeat last year, it attempts to establish a link between pesticides and breast cancer. Hayden has retailored it to fund research into estrogen-imitating compounds, including pesticides. On the surface, you might ask, "'What's wrong with more research?" but in this case, there is adequate ongoing research.

HAWAII

S. 1320—Bans use of herbicides in maintenance of public roadways.

This one would eliminate roadside spraying by eliminating any chemical means of controlling weeds. Hawaiian activists claim roadside mowing will control the vegetation problem.

ILLINOIS

H. 1058—Amends the mosquito abatement district acts, asserting municipal rights.

Would rescind uniform statewide pesticide legislation on abatement, giving cities and towns the right to regulate and prohibit mosquito spraying. There are 51,000 municipalities in America. Do you want to be in the mosquito abatement or landscape management business when they all establish their own regulations?

MASSACHUSETTS

H. 2619—Landlords need permission from the Health Board prior to application.

You must apply for permission before spraying for termites and cockroaches. That's any application, inside or out, and on the grounds. Paperwork heaven.

MARYLAND

S. 128—Mandatory IPM in public schools.

Mandatory is the operative word. IPM ought to be done on a case-by-case basis. Each school is a different eco-system. The good news: this one is dead, but RISE is cooperating in setting up a voluntary program in cooperation with the state department of aariculture.

NEW YORK

A. 3755—Pesticide use reporting: breast cancer study.

The nightmare of nightmares. Politicians would require a report of every pesticide application in the state, with a long, detailed form. It would apply to commercial and private applicators. What they're trying to do is use this information they will have generated to try to establish a link between breast cancer and pesticide use. Nobody has enough people on the payroll to sort through this stuff.

A. 604 and 2269—Local regulation of commercial lawn applicators and reverse preemption of state pesticide laws, returning law-making to the local level.

Another door-opener to local option regulations. A. 955—Replaces herbicides as method of weed control on rights-of-way.

(See Hawaii bill.)

A. 2072—Provides for reduction of pesticide use by state agencies.

Requires state agencies to develop plans to reduce overall pesticide use. Fits in with the activist agenda that reduced use equals reduced risk. The two are not necessarily connected.

A. 3164—Prior notice to owners of adjacent property.

Another pain-in-the-neck notification bill. A. 3968—Outlaws uses of pesticides that are "known/probable/possible" carcinogens.

This one would outlaw all pesticides that ever gave a problem to a laboratory rat. Will New York solons start in next on naturallyoccurring pesticides with alleged carcinogen risks? They outnumber chemical pesticides 100 to one.

A. 5507—Applicator must file written proof of the existence of target organisms prior to application.

Sure, right after we get done notifying the neighbors, getting the landlord to ask the city for permission, filling out a pesticide use form for breast cancer studies and checking to see if we are complying with bizarre local laws.

OKLAHOMA

H. 1165—Prohibits certain public entities from using herbicides. Prohibits state agencies from pesticide use.

Bill is a perennial, same guy comes up with the same basic bill. Dead—for now.

S. 308—Requires 24 hour pre-notification of spraying, and 14-day post-notification.

Not only do you notify the neighborhood before you spray, you make sure those notices stay up for two weeks. Known as the "printer's relief act."

TENNESSEE

S. 1740—IPM in schools; calls for "least harmful" pesticides to be used.

A very popular issue in legislatures. This one died for lack of support.

TEXAS

H. 1471—Structural pest board to adopt IPM standards in day-care centers.

This one, like so many others, is backed by the National Resources Defense Council and the National Coalition Against the Misuse of Pesticides (NCAMP).

WEST VIRGINIA

H. 2471—Mandatory IPM for schools and day care centers.

Face it, this one passed the legislature and the Governor allowed it to become law without his signature. RISE is working with state to help them put a sensible law in place by the Aug. 15 deadline, when the state agriculture department must have a program in place and delivered to local school boards.

EPA focuses on birds, fish

The "E" still stands for "environmental," asserts Dr. Anne R. Leslie, a chemist with the EPA. And its mission will be focused on the effects which foreign materials have on the environment—specifically, bird and fish kills—in the near future.

The EPA has called in data for any bird and fish kills that may be pesticide-related. Leslie suggests that landscapers, lawn care owners and golf course superintendents "save the carcass and send it to us for sampling."

"The toxicity we've seen has occurred at the proper application rates," she notes. "We see a number of instances where birds are affected by pesticides, and it's not always immediate. And it's happening on turf." What the EPA is doing to reduce its regulatory burden:

COVER STORY

Using quick registration (six months) as an incentive for manufacturers to bring to market less risky pesticides.

Giving exemptions for tolerances of residues in food, like pheromones.

Requiring Experimental Use Permits to test at least 250 acres.

Giving blanket exemptions to pesticides that need no registration (like cedar wood blocks for moth control).

Supporting and encouraging new bio-pesticides.

Nonetheless, she says that some materials used on turf "may need stricter regulation," to wit: ethoprop, diazinon, bendiocarb, isofenfos, chlorpyralid and trichlorofon.

"We regulate pesticides, not the uses of pesticides," says Dr. Leslie. "Our job is to assure that the benefits outweigh the risks. But the true benefits are far from being clear; in fact, they're quite controversial."

The EPA's new "Pesticide Environmental Stewardship Program" will give landscape managers safer options.



It may well be Dr. Anne R. Leslie

offered in cooperation with user groups such as the Golf Course Superintendents Association of America, the Professional Lawn Care Association of America, and the U.S. Golf Association, all of which want to participate.

Dr. Leslie made her comments in front of an audience at the Virginia Turfgrass Conference earlier this year.

-Jerry Roche

Can't we all just get along? Hell no!

In Washington, it is said, 50 percent of the job in getting legislation passed is in knowing who your friends are. Based on experience, those interviewed for this report on the prospects for legislation affecting the green industry separated the industry's friends from its foes.

FRIENDS

Rep Tom Bliley, R-Va. Chairman of the full House Commerce Committee.

Rep. John Boehner, R-Ohio. GOP conference committee chairman.

Rep. Gary Condit, D-Fla. The person who, along with Rep. Karen Thurman, led the fight against elevating the EPA to full cabinet status (See Karen Thurman).

Kika de la Garza, D-Tex. ranking member, full House Agriculture Committee.

Rep. Tom DeLay, R-Tex. House Majority Whip. The moving force behind Project Relief, the small business coalition that sparked much of the GOP's "Contract With America" regulatory reform legislation.

Rep. John Dolittle, R-Calif. A strong, consistent industry supporter.

Rep. Cal Dooley, D-Calif. He has carried amendments for the industry in the Agriculture and Natural Resources committees.

Rep. Bill Emerson, R-Mo. Chairs House Agriculture Subcommittee on Department Operations, Nutrition and Foreign Agriculture. Critical to success of new legislation.

Rep. Tom Ewing, R-III. Early booster of reform, pro-small business and regulatory reform.

Rep. Mark Foley, R-Fla. Freshman and one of the new breed, former chairman of the Fla. Senate Agriculture Committee.

Sen. Mark Hatfield, R-Ore. Sits on the Senate Appropriations Committee, is a strong supporter of the nursery industry.

Rep. Tim Johnson, D-S.D. An immense help on the crop insurance issue.

Rep. Bob Livingston, R-La. Chairs full Appropriations Committee.

Rep. Richard Lugar, R-Ind., Chairs Senate Ag Committee. Good, solid lawmaker with reputation for integrity.

Rep. David McIntosh, R-Ind. Chairs House Subcommittee on Government Reform and Oversight, and is a leading regulatory reform advocate in the House.

Rep. Charlie Norwood, R-Ga. A guy with a huge interest in changing the way OSHA does business. His biting one-minute speeches kept liberals off-balance during the first 100 days of the "Contract With America."

Rep. Jim Nussle, R-Iowa. A key player on House Ways & Means Committee.

Rep. Richard Pombo, R-Calif. Second term Congressman sits on House Ag Committee. Ferocious fighter for common sense pesticide laws based on bitter experience.

Rep. Earl Pomeroy, D-N.D.

Rep. Pat Roberts. Chairs House Agriculture Committee. See how fast bills fly out of there now.

Rep. Karen Thurman, D-Fla. The moderate on the House Agriculture Committee who led the fight against elevating the EPA to cabinet status unless it agreed to consider costs vs. benefits and risk assessment in passing new regulations.

Rep. Charles Stenholm, D-Tex. The highly respected ninth term member of the House Agriculture Committee.

FOES

Rep. Sam Farr, D-Calif.

Sen. Russ Feingold, D-Wis.

Rep. Jon Fox, R-Pa. Perennial sponsor of the worst piece of state notification legislation ever conceived.

Rep. Maurice Hinchey, D-N.Y. Watch this one, based on his activist legislation in the New York state legislature.

Sen. Pat Leahy, D-Ver. A key barricade in the liberal roadblock that stymied commonsense pesticide legislation in the House and Senate.

Sen. Joe Lieberman, D-Conn. "Mr. Notification Law" in Congress.

Rep. Cynthia McKinney, D-Ga.

Rep. George Miller, D-Calif.

Sen. Patty Murray, D-Wash. An activist on each shoulder.

Gerry Studds, D-Mass. Activist on water issues, wants to drive up the price tag of cleaning up waterways, billing pesticide users and producers in the Dem version of the Clean Water Act.

Rep. Henry Waxman, D-Calif. The man most responsible for bottling up the legislation in the House Energy and Commerce Committee for four years that was needed to overturn the Delaney Clause. Need we say more?

Sen. Paul Wellstone, D-Minn. Strong antiindustry proclivities.



The combination of Trimec[®] herbicide components and MSMA in Trimec Plus gives you one of the most efficient and convenient herbicides ever developed for use in turf!

Since most problems can be cleaned up with just one application, there is less chance of damaging your desirable turfgrass.

Approved for use in bluegrass, tall fescue, zoysiagrass and bermudagrass.



Gets unwanted grasses, nutsedge <u>PLUS</u> broadleaf weeds in turf.

66Weed problems were very severe in 1990 when I took

charge of this 4 year old course. Relying heavily on Trimec Plus we

achieved complete cleanup in just a couple of years. We still use Trimec Plus, but mainly for goosegrass escapes now.??

James M. Taylor, CGCS HATSUHO INTERNATIONAL COUNTRY CLUB Dededo, Guam



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66For the past two years we have used Trimec Plus on our roughs and greens collars to control crabgrass and broadleaf weeds. Results have been excellent,

even on nutsedge, and spraying Trimec Plus is more convenient than using or tank-mixing several different products.

Michael S. Sullivan, GCS HAWTHORNE HILLS COUNTRY CLUB Lima, OH

"safety net" for our preemerge program which is split into two applications. Late signing accounts, however, get only one – or none. When service calls involve either craborass or



calls involve either crabgrass or nutsedge, Trimec Plus is our answer.??

Norm Tetter, Gen. Mgr. LAWN GENERAL Gaithersburg, MD



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ALWAYS READ AND FOLLOW INSTRUCTIONS ON THE PRODUCT CONTAINER.

Tune-ups boost employees' worth

People are one of the few

assets that become more

valuable with time.

by Vic Osteen

 You would not invest in an expensive piece of equipment and not do regular maintenance on it. Most pieces of equipment come with a recommended maintenance schedule of service. It tells how and when to check fluid levels, replace worn parts, inspect and adjust components. It ensures that you get the best out of the piece of equipment.

This is also what should be done with our employees. We need to regularly spend time with them, not just when they become complacent or burned out.

Meeting with employees to go over an annual performance review isn't enough. We need to do preventive maintenance on them to keep them performing effectively and efficiently. We must regularly check their performance, provide information, redefine goals and objectives, and be sure that they are running like a well-oiled machine.

Something as simple as having a brief conversation with each employee on a regular basis may be enough. I know of one manager who goes through his desk calendar, puts a person's name on each day, then makes the effort to stop by and visit with that person, or spend some time with him or her.

This would certainly be more beneficial than complaining that people don't how to work any more. Or that people don't want to work any more. Or that people haven't been taught how to work. These are complaints I'm hearing way too often now.

The workforce and the employee have changed in the past two decades. We as employers and managers must recognize these changes and make adjustments in the way we think and act.

The basic image of employment for today's worker has changed dramatically. There is no longer such a thing as job security or a long-term commitment from the company due to mergers, downsizing, and new technologies. Employees are reacting to this realization, and many live in fear that they will be tossed out just as quickly as yesterday's computer.

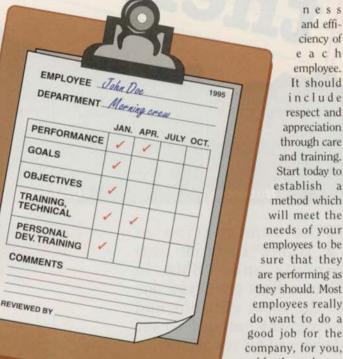
On the other hand, without employees, work would not or could not take place. Employers must recognize the value of employees and people in general while seeking to run a profitable business.

People are one of the few assets that become more valuable with time.

Through their ever-increasing ability to gain knowledge, store information. and formulate ideas and concepts, employees, unlike most other assets, actually appreciate in value rather than depreciate.

managers take the time and effort to do so. In fact, Peter Drucker, the father of modern management in the United States, says that, "When you become a manager, you give up honest work and should spend all of your time making sure that the employee can get his work done."

I recommend that you spend some time developing a system that will regularly monitor the effective-



Managers need

to develop an "employee maintenance schedule" which also includes employee training-not only technical, but personal development training as well. In order to build a better workforce, we need to build better people. Training is an opportunity for the employee to check actions and attitudes, make adjustments, and, in many cases, recharge their batteries.

It is obvious that the paycheck is no longer a strong motivator for most employees after their basic needs are met. Even million dollar baseball players want more. I have found that most people want two things from any employer: respect and appreciation. These are manifested in several ways, such as being part of a team, knowing what is going on, having interesting work, and having a manager who cares about employees as people.

All of these are very easy to provide if

ciency of each employee. It should include respect and appreciation through care and training. Start today to establish a method which will meet the needs of your employees to be sure that they are performing as they should. Most employees really do want to do a good job for the company, for you, and for themselves.

If for no other reason than financial, it is best to maintain and

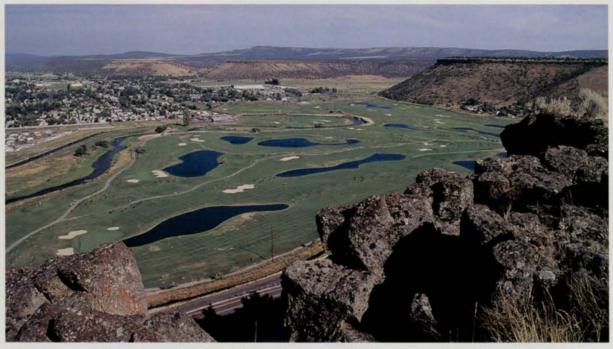
keep good employees. It is estimated that the cost of replacing an employee is pricey, one third of his or her annual salary.



-The author is a leading consultant and speaker in the green industry. For more information or to comment, contact Vic Osteen, Growth Seminars, 3726 S. Peoria #31, Tulsa, OK; (918) 742-8454.

GOLF & ATHLETIC TURF

Public course helps city out of waste water nightmare



Meadow Lakes Golf Course, irrigated with effluent water from the tiny nearby city of Prineville, Ore., is a pretty sight from the surrounding 300-foot plateau.

• Wayne VanMatre looks down from the 300-foot-high plateau to survey his Meadow Lakes Golf Course below. It looks like an intricate green puzzle in central Oregon's Crooked River Valley. With his eyes he can pick out the 66 bunkers, but he needs binoculars to distinguish any of the 1,500 young trees.

"I can walk the rim rock and see every inch of the course," says VanMatre. "It's like being able to fly over the golf course anytime I want to."

It's a pretty sight in the dry, crisp air just east of mountainous Willamette

National Forest. A relatively new sight too. Construction started on the course in May 1992 with the front nine opening in July 1993 and the back nine a month later.

Golf course architect Bill Robinson did a nice job. He designed 10 acres of blue ponds into 133 acres of turfgrass. Wetlands, about 10 acres, separate the golf course from the river's edge.

When VanMatre, a native Oregonian, heads for the plateau though he's not sightseeing; he's usually checking out Meadow Lake's irrigation.

Water's a big deal at this course that's

located a half mile south of downtown Prineville. Specifically, waste water. Meadow Lakes uses a lot of it for irrigation (last summer about 350,000 gallons per day, this summer probably more). It's a good thing for Prineville that it does too. The course helped the city get out of a big jam. Here's how.

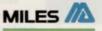
Fines threatened—Less than five years ago the city of Prineville (pop. 5,800) faced fines of up to \$10,000 a day for noncompliance to provisions of the Federal Clean Water Act. Its out-dated waste water *continued on page 20G*

	ELSI		
Velvet bent	Doling out \$\$	Protecting	Maintaining
for the future,	for good mowers,	your trees,	athletic turf,
page 20G	page 26G	page 30G	page 30G



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What's more, you can apply MERIT in the spring to control billbugs and *Hyperodes* weevils and provide enough residual to effectively control grubs throughout the summer.
To find out more, contact Miles Inc., Specialty Products, Box 4913, Kansas City, MO 64120. (800) 842-8020.
Because where workers and insecticides are concerned, less is more. So use MERIT and use less.



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GOLF & ATHLETIC TURF

WASTE from page 17G

treatment facility discharged pollutants into Crooked River.

"Nobody disputed the need to clean up the river," says VanMatre. "The problem was financing a new plant."

The city looked into building a state-ofthe-art treatment facility. But the price tag of \$25-\$30 million was too steep. Finally, Prineville gained EPA approval, along with \$10.3 million in grants and financing, to upgrade its older facility.

This appeased regulatory authorities. But it left the city with another problem.

Prineville had to find something to do with as much as 1 million gallons of treated waste water daily because, by agreement, it could only discharge into Crooked River six months of the year, or only during the fall and winter. During the growing season the waste water was to be applied to the land.

Effluent as irrigation—The original plan called for irrigating alfalfa fields with the effluent. But there wasn't enough acreage. Then the mayor and city manager turned the city's attention toward using the effluent to irrigate a new golf course.

Initially, the EPA said "no way" to this suggestion, remembers VanMatre. Regulatory agencies finally acquiesced when enough safeguards had been designed and built into the project.

For example, even though this part of

Oregon is high desert and gets only 10 inches of precipitation annually, the ground water is just 5-8 feet below soil surface. To keep effluent from contaminating the ground water, crews, using a laser-guided trencher, installed 22,000 feet of deep drainage tile during the course's construction. It took 11/2 weeks. They dug it. laid the pipe and put a sand envelope around the pipe all in the same operation, says VanMatre.

The course must regularly monitor seven wells on

site for evidence of nitrates or contamination. So far, no problems, says VanMatre.

Safeguards in place—The city is producing about 650,000 gallons of treated waste water daily. It's pumped from the city treatment plant to a 13-acre storage pond. From there it's piped to the 10 shallow ponds on the golf course. These ponds are lined with high-density plastic. The ponds will hold a total of about 15 million gallons. About 13 million gallons will evaporate during a normal summer.

Then, in the evening, when all golfers are gone, the effluent is used to irrigate the course. The Rainbird Maxi 5 irrigation control system can apply 3,200 gpm, as much as 1.5 million gallons a night.



Wayne VanMatre, superintendent of Meadow Lakes Golf Course, Prineville, Ore.

five years.

Between 70-80 percent of the play comes from outside of the Prineville area, adds VanMatre. Some comes from Bend, Ore., a nearby community of about 50,000. And some comes from the other side of the mountains, cities like Portland and Seattle.

Since the property on

which the course was built

was flat. Meadow Lakes fair-

ways had to be sculpted to

drain into its 10 plastic-lined

the ponds. That allows the

Meadow Lakes crew to over

water the greens one week a month to flush effluent salts

from the Pennlinks turfgrass.

about 30,000 rounds in its

first full season. He's hopeful

that it will build to 40,000

rounds per season within

VanMatre says the public course should finished with

The greens also drain into

ponds.

Whether VanMatre is walking the course or looking down onto it from the adjacent plateau, he says Meadow Lakes is both challenging and beautiful. And, because it's a municipal-type course, it's also affordable.

"We wanted the type of golf course that would draw people here," he says. "We think it turned out pretty nicely."

-Ron Hall



Skogley, with a healthy patch of Velvet bent that thrives in shade or sun.

Velvet bent: the future of temperate greens?

by C. R. Skogley, Ph.D. University of Rhode Island

Velvet bentgrass (Agrostis canina, subsp. canina) could be the grass of the present and the future for golf greens in temperate regions. Large sums of money are spent annually attempting to find ways to reduce management inputs on golf turf. One obvious—but neglected—method to achieve this goal is to use a grass that has reduced growth requirements.

Velvet bentgrass is such a grass.

Velvet bentgrass was a common component on greens on many older golf courses into the 1960s. In most cases, it arrived as a component of "South German mixed bent," the seed widely used on our earliest courses. "South German" was a naturallyoccurring blend of creeping bent (A. stolonifera L.), colonial (A. tenuis Sibth.) and velvet. For many years, it was the only bentgrass available as seed. Until the advent of 'Seaside' and 'Penncross' varieties in the 1940s and 1950s, greens were established with "South German" seed or were vegetatively established from stolons.

Under the low level of maintenance provided through the first half of this century, velvet bent would generally predominate over creeping bent. With the advent of increased inorganic fertilizer and water use, velvet began to suffer and developed a *continued on page 22G*

You'll want to be among the first to use PROSTAR®, the remarkable new systemic fungicide from AgrEvo USA Company. Extensive tests by leading universities and golf course superintendents have shown that PROSTAR provides outstanding control of brown patch, yellow patch, and gray snow mold. It also stops southern blight, pink patch and red thread. In addition, PROSTAR has demonstrated its ability to suppress fairy ring for which no control agent currently exists. So

now you can rely on the broadspectrum activity and extended residual control of this outstanding new compound.

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PROSTAR can be used either for preventative or curative control and has shown excellent safety on all species of fine turf.

For more information on new PROSTAR, call or write AgrEvo USA Company.

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

PROSTAR...Your key for locking out turf disease. Turn it to your advantage.

Circle No. 101 on Reader Inquiry Card

VELVET from page 20G



Overwhelming choice of the pros

In 1932, ten professional golfers were invited to putt on greens at the Arlington Turf Gardens in Virginia. The trials included four well-known vegetatively-established creeping bents, colonial bents, South German mixed bents, and one selection of velvet bent.

Each professional was asked to rate the putting qualities of these grasses and to indicate his first, second and third choice. Velvet bentgrass received the first choice vote of all 10 pros for the best putting surface.

Velvet bent's most notable characteristic is its deep dark color, as these test plots illustrate.

poor reputation among superintendents. As velvet bentgrass was weakened by excessive management, *Poa annua* became a prime replacement. As the following generations of superintendents came into the decision-making positions, few were familiar with velvet bentgrass management, and fewer still made the effort to learn.

Agronomists recognize that each species of grass has specific growth requirements for optimum performance. Bentgrasses, in general, perform under lower fertility conditions better than do bluegrasses or ryegrasses. Within a genus such as *Agrostis* (bentgrasses), there is also a range of differences among species. Velvet and colonial will make good growth under lower fertility and drier soil conditions than will the creepers. Colonials will tolerate drier soil conditions than will the velvets, but will not tolerate the close cut required on greens.

Velvet bentgrass may be found in Newfoundland, Quebec, and Michigan in the north and as far south as Delaware, West Virginia and Tennessee. It is welladapted to shady locations as well as sunny sites. Velvet bent is rather tolerant of infertile soils, but not soils that are poorly drained.

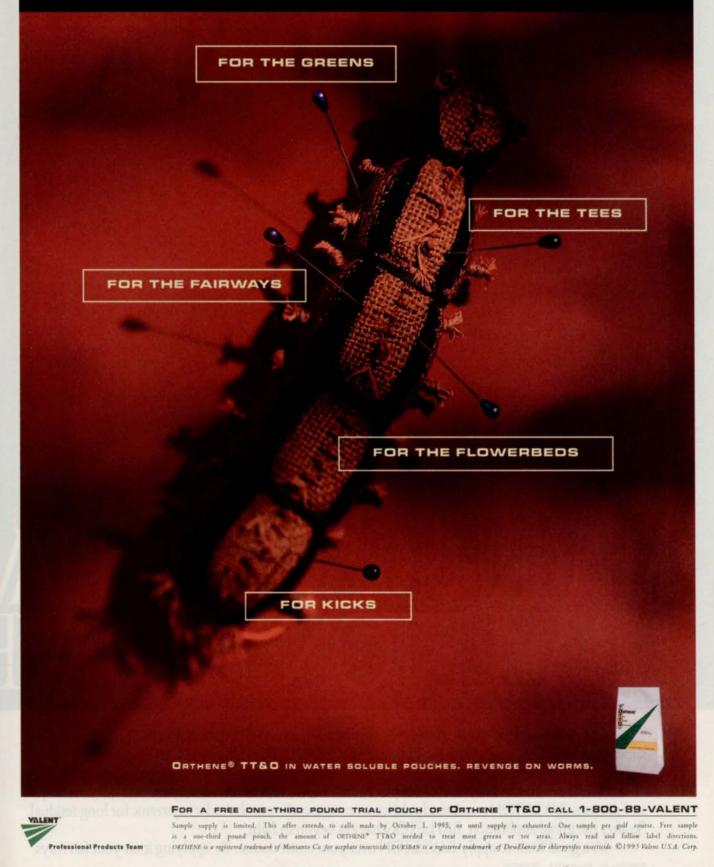
During 1962, a variety of bentgrass called 'Kingstown' was released by researchers at the Rhode Island Station.

GRADI	NG THE BE	NTGRASSE	S	
3.23 · · · · · · · · · · · · · · · · · · ·	Velvet	Colonial	Creepers	
Low fertility tolerance	A	A	В	
Dry soll tolerance	в	A	с	
Close cut tolerance	A	В	в	
Shade tolerance	A	в	в	

Like most velvets, it was light green. Since most superintendents in America believe a dark green grass is needed, Kingstown's color was a serious disadvantage. Efforts to enhance color with excessive fertilizer treatments resulted in soft, weakened growth and, eventually, loss of stand density to *Poa annua*.

However, during 1994, seed of a new generation of velvet bentgrass, SR 7200, was released. Its inherent color is significantly darker green. It retains this color even under the low fertility conditions upon which it thrives. Although the light textured, infertile and acidic soils of New England may favor velvet bentgrass management, the grass has performed well when properly managed in many regions of the U.S. Additional testing will help determine its range.

-The author is retired professor emeritus at U.R.I., Kingston. This article originally appeared in "The Seed Researcher," the newsletter of Seed Research of Oregon. For more information on SR 7200, phone (800) 253-5766. CUTWORMS. ARMYWORMS. SOD WEBWORMS. BAGWORMS. GET BACK AT ALL OF THEM WITH ORTHENE® TURF, TREE & ORNA-MENTAL SPRAY. IT CONTROLS A WIDER SPECTRUM OF WORMS THAN DURSBAN® AND DEGRADES RAPIDLY — SO YOU DON'T HAVE TO WORRY ABOUT SURFACE WATER CONTAMINATION. AND OUR NEW WATER SOLUBLE PACKAGING MAKES REVENCE EVEN EASIER.



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It's a good tactic to apply BAYLETON over your entire course. By applying it on your fairways,

E SURRENDERED TO LL OVER A DECADE.

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

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Circle No. 104 on Reader Inquiry Card

GOLF & ATHLETIC TURF

Supers say they'd dole out extra dollars for low-pollution, low-noise equipment

• An overwhelmingly large percentage of golf course superintendents would pay up to 10 percent more for quiet, low-pollution mowers, according to an exclusive LANDSCAPE MANAGEMENT survey.

According to results from the straw poll, which was taken at the LM booth during the GCSAA trade show earlier this year, 80.9 percent of the superintendents (68 of 84) answered "yes" to the question:

"Would you pay an additional 10 per-

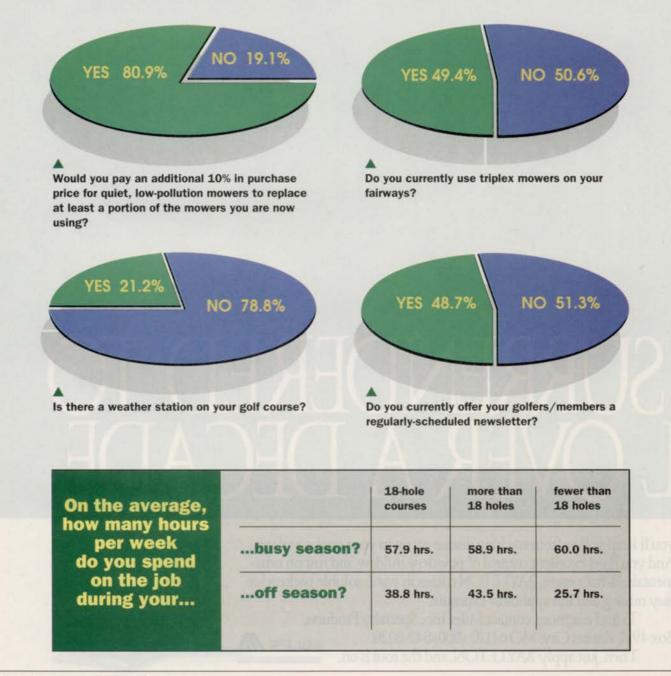
cent in purchase price for quiet, low-pollution mowers to replace at least a portion of the mowers you are now using?"

The survey also found that about half of the respondents use triplex mowers for fairway mowing and about half offer golfers/members a regularly-scheduled newsletter. However, despite the fact that more than four out of five of the respondents have access to on-the-job computer systems, only one in five have weather stations on their course.

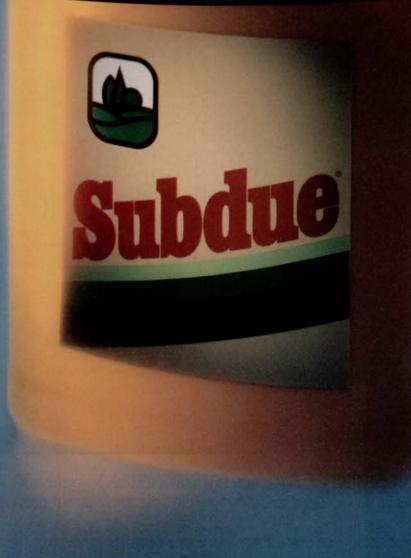
Long days are not uncommon, the respondents said through their answers. The average superintendent for an 18-hole course works 57.9 hours a week during the course's busy season and 38.8 hours a week during the slack season.

For their part in the survey, the respondents were given a sleeve of "Landscape Management" golf balls and tees.

-Jerry Roche



THERE ARE A HUNDRED THINGS THAT CAN GO WRONG ON A GOLF COURSE. THIS LETS YOU CONCENTRATE ON THE OTHER 99.

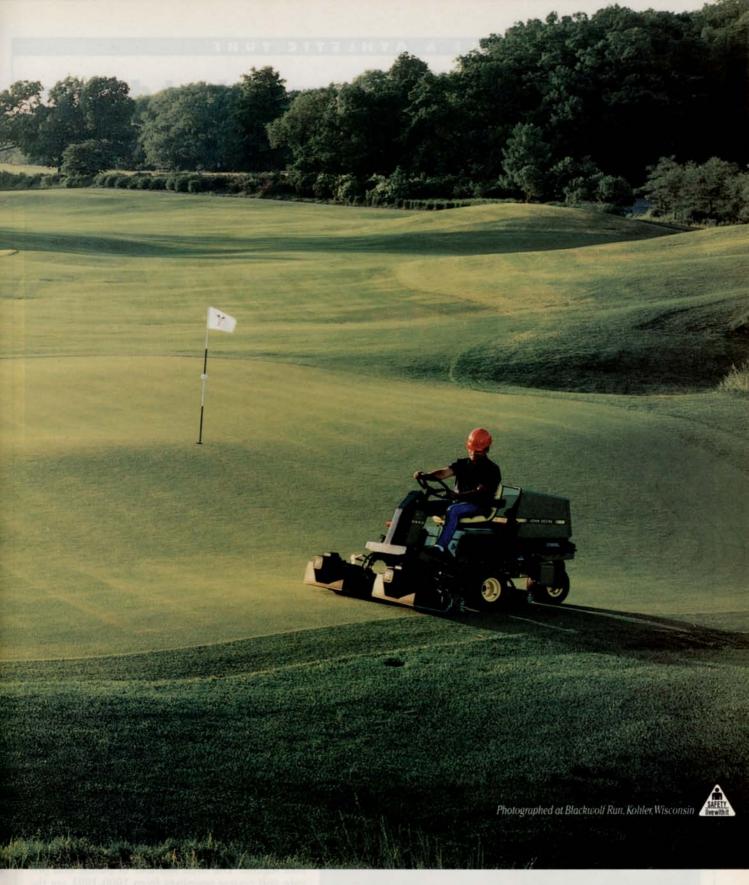


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You deserve credit for helping make the impossible possible

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Circle No. 115 on Reader Inquiry Card

GOLF & ATHLETIC TURF

Tree care protects your budget dollars

Lose a key tree, and it's

money down the drain.

Monitor tree health at

regular intervals.

Trees do more than add to golf course scenery. They're also used to direct the line of play, and can certainly create a challenge for any golfer.

Losing key trees, or a golf course "signature" tree, can damage the integrity of the course design. Remove a strategically placed tree and the par of the hole is then affected.

And finally, there are replacement costs.

Marianne Waindle, a horticulturist with Davey Tree Co. of Kent, Ohio, advises that "a little extra effort today can help eliminate future hassles."

And that means frequent tree health checks, which can range from a simple stroll around the course while recording data on tree condition to a detailed computerized tree health inventory. Tree health inventories help identify the threats to crucial trees. And the more information that is collected about each tree, the better you'll be able to budget maintenance costs.

Group by variety—Certain pests usually infest certain species of trees.

"If a lot of key trees are American elms, then you should monitor for Dutch elm



disease," says Dr, Douglas Caldwell, a Davey entomologist.

"If you have a monoculture of a certain tree species, you can budget for new plantings to incorporate other species that will thrive in your region."

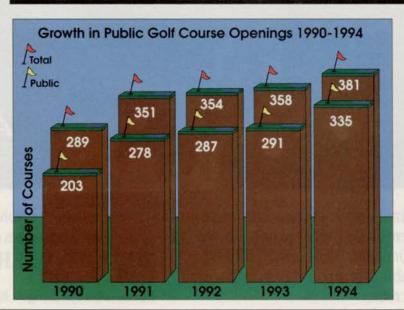
Learn which pests have been—or are expected to be—problems in your part of the country. You can find out from your state extension service, local chapters of professional tree care organizations, tree care consultants, and agricultural colleges and universities. With a quick trip to your local library, you can find tree care manuals which contain valuable information.

Count the costs of replacing a signature tree:

- 1) The money you spent for it orignally, or the intangible sentimental value.
- 2) The price of the replacement.
- 3) The tree spade rental.
- 4) Labor costs.
- 5) Repair of possible turf damage from the heavy equipment.
- 6) Interrupted play.
- Time away from other course projects.
- Disappointed golfers who loved 'that old hickory,' and wonder 'what happened.'

What next?—Take care of those trees! "A healthy tree is better able to tolerate or fend off attackers than an unhealthy one," says Caldwell. "Regular cultural practices, such as fertilization and mulching, help keep trees in good condition."

Inventory data can be used to prioritize maintenance needs, such as pruning, fertilization, mulching and watering. You can also use inventory information to implement a plan of systematic tree maintenance. Once your plan is in place, you may not only notice a decrease in pest problems, but an overall improvement in appearance.



Correction

• The April issue of Landscape Management ran the graph at the left comparing the growth of private and public golf courses in 1990-1994 on page 6G.

The legend, however, was from an accompanying graph which depicted total rounds played, and confused the whole point of the statistics.

The graph at left shows the chart with the correct legend. The total number of public and private golf course openings from 1990-1994 are the same totals as were listed in the April issue.

LANDSCAPE MANAGEMENT regrets any inconvenience this may have caused.

-The editors



MOLE CRICKET

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Turf insects like the mole cricket can leave indelible marks even on your best work. But true turf craftsmen know they can always erase turf pest problems, especially with TURCAM® insecticide at their fingertips.

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timed treatment means root-feeding insects virtually disappear.

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

GOLF & ATHLETIC TURF

Turf maintenance for athletic fields

For the healthiest turf,

these special

considerations must be

observed throughout the

year.

by David D. Minner, Ph.D.

Constant evaluation of athletic field turfgrass management is essential for grass survival and player safety. The following factors deserve special consideration:

Irrigation—Adequate irrigation should be your top priority. It will do more to establish and keep turf under tough conditions than any amount of seed, sod, fertilizer, pesticide or cultivation.

The best irrigation is a permanent and automatic and supplies water evenly.

Use light, frequent watering when forcing growth or renovating high-traffic areas with seed, sod or stolons. Design irrigation to fit the traffic patterns of the field. In a block irrigation system, install additional heads on separate blocks to water hightraffic areas separately. Or, arrange the irrigation blocks to water at least the center of the field separately.

Commercial traveling gun sprinklers can be used successfully to irrigate athletic fields. They are portable, but usually take 8 to 10 hours to irrigate a single field.

Drainage—Three basic types of drainage for athletic fields are surface, subsurface and internal rootzone. Combining all three provides the best growing conditions and, more importantly, avoids soggy wet playing conditions.

Surface drainage involves crowning or grading the field to provide a 1 to 1.5 percent slope to remove water rapidly from the surface during heavy rains. All topsoil fields should be crowned. Fields with concave "reverse" crowns should have soil replaced to reestablish proper grade. Sandbased soccer and baseball fields with good internal rootzone drainage can be constructed with 0 to 5 percent grade.

Subsurface drainage uses an interconnected system of perforated drain pipe and clean gravel in trenches. On topsoil fields, these drains typically are placed 2 feet deep

ATHLETIC FIELD TURF CONSIDERATIONS

- 1) Irrigation: preferably permanent, automatic and even.
- Drainage: preferably surface, subsurface and internal rootzone.
- Traffic control: preferably with cooperation of coaches, administrators.
- 4) Cultivation: preferably 12-25 holes per square foot.
- 5) Overseeding: preferably in high-use areas.
- 6) Fertility: preferably nitrogen and potassium at equal rates.

on 15-foot centers. They reduce prolonged saturated soils and improve root growth; they drain slowly, however. Subsurface drains are also placed in sand fields to remove water from the base of the sand profile. Sand rootzones must handle a high volume of water in a short time.

Internal drainage involves the flow of water after it enters the surface and before it reaches a drain pipe. Rootzone materials with many large pore spaces move water faster. Athletic fields with water infiltration rates greater than five inches per hour (usually high sand content fields) have rapid internal drainage. Topsoil fields with infiltration rates below one inch per hour have slow internal drainage.

Traffic control—If you have acceptable turf in non-traffic areas of the field (beyond the end zone, etc.), change the pattern and amount of traffic, rather than the species or management practices.

Administrators should know that proper traffic control costs nothing, and is the most effective way to reduce dangerously worn areas on game and practice fields. Work together with coaches to develop improved grass areas specifically for drills conducted off game and practice fields.

Try to reserve the game fields for games only. Scrimmage on practice fields, but practice drills on off-field areas. Except when the field is too wet, one marching band practice per week under the lights is not unreasonable. Mark out an exact game field with numbered yardage lines on a level, unused turf area as a separate band practice site. **Cultivation**—Core fields regularly. Low traffic areas may need coring only once or twice per year to prevent thatch and increase water infiltration. Heavily worn and compacted areas will require more frequent cultivation to break up hard ground, allowing for the spread of existing grasses and establishment of seedling grasses. At least 12 holes per square foot are needed during routine maintenance coring; 25 or more holes per square foot for renovation with reseeding.

Overseeding—Overseeding may be needed where the turf has been worn beyond recovery.

High-use areas of cool-season grasses may be overseeded during the playing season. Off-season overseeding generally covers the entire field. Overseed warm-season grasses with cool-season grasses to provide actively-growing cover for cool-season play.

Consider sod when cool-season grasses are desired and you don't have enough time to establish cover from seed during the off-season.

Fertility—Test soils annually, and adjust for pH, phosphorus and potassium. Gear the nitrogen application schedule to the climate and grasses. More nitrogen may be required on soils amended with sand. You may need to force growth and recovery of turf in high traffic areas with additional nitrogen.

During the annual field renovation, an additional one pound of P_2O_5 per 1,000 sq. ft. should be applied at the time of seeding, even if the soil test indicates adequate soil phosphorus. Make routine applications of phosphorus immediately after core aerification to move it deeper into the rootzone.

Apply potassium at a rate and schedule equal to nitroge. It improves traffic tolerance, reduces wilt tendency and helps grass blades stand up more quickly.

Grass options—In regions where either cool- or warm-season grasses will survive, consider the pros and cons of each as the dominant turf. Choose from the numerous cultivars available to best meet specific field needs.

-The author was named 1992 "Groundskeeper of the Year" by the American Baseball Coaches Association, and is a former secretary of the national Sports Turf Managers Association.

LAWN & LANDSCAPE

Going RETAIL

by Christian Zenk

The decision to bring our landscape services corporation into the retail market evolved out of economic necessity. After continued erosion of our company's customer base in Westchester County, New York, a change was warranted. Our market share loss was primarily due to a downturn in the local economy, along with increased competition from illicit one-man moon-lighting operations.

We noticed this trend approximately five years ago and have watched it evolve and infiltrate every segment of the landscape market, from maintenance to planting.

Our opportunity to give a new face to the landscape division arrived in 1994. It was then we discovered an existing garden center in adjacent Fairfield County, Conn., whose proprietor was retiring after 30 years. The garden center is located in an affluent and growing area, and had been closed for approximately 12 months. The closing occurred in early February 1995. After much sweat, equity and a great deal of assistance from the previous owner, the garden center is fully functioning. The location was perfect, and there is limited competition in the local market. The garden center is the only one in town.

We decided to run the facility as an entirely separate and independent entity from our existing company. A new name was chosen and marketing strategy developed. The relatively close geographic locations compelement each other nicely. The potential crossover business would be beneficial in assisting growth.

The garden center now attracts potential customers to a central locale where we can advertise our special and unique landscape



Richard Zenk, above, secures the Locust Glen signpost. At right, Chris Zenk holds one of the custom-made signs sold in the garden center.

service to an upscale clientele. It does this effectively as it is the centerpiece of a new 50-house subdivision with high-end homes starting at \$400,000. Conversely, many of our oldest established accounts now can visit our retail endeavor for excellent service and savings. Also, a great economy of resources and scale is realized in that the garden center is a prime supplier of materials to our landscape firm.

On the customer level, we have found that people like to know the physical location that their services originate from, rather than some non-descript post office box and a voice answering machine. Their access to us is open and unlimited as it *continued on page 20L*

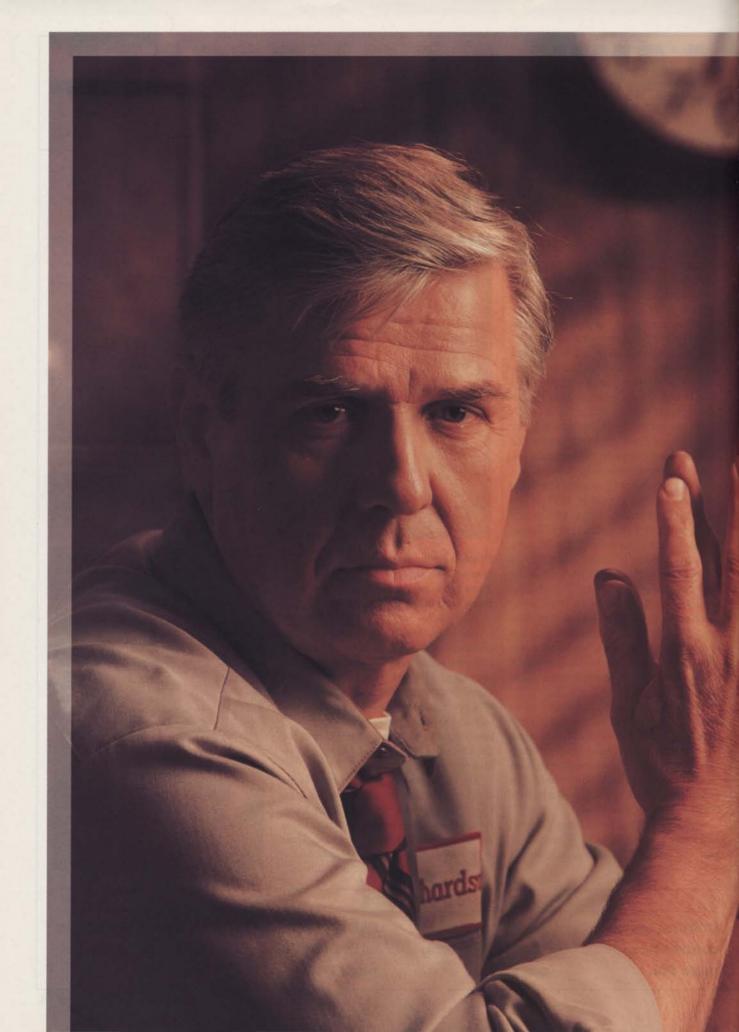


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PLCAA to partner with the EPA page 24L

Use photography to sell your pruning, page 30L



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LAWN & LANDSCAPE INDUSTRY

RETAIL from page 17L

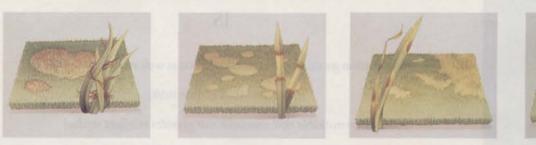
relates to our people and resources.

In-house, at the employee level, the morale is high and everyone is content due to guaranteed work all year. Inclement weather days are spent inside, stocking shelves with products and working in outdoor greenhouses potting plants. Retail sales seminars offered by our suppliers to our employees are available. Just as important, our employees who maintain excellent horticultural skills can deploy their skills in a different direction. With the purchase of Locust Glen Garden Center in conjunction with the of Zenk Country Landscapes business, our customer base is growing. Materials are purchased directly from sources such as growers and manufacturers rather than retailers. There will always be the black market in the landscape service sector with the fly-by-night individuals out to grab a few quick dollars after their workday ends. But we have found that the high-end customer who values the extra level of complete devotion to their property will seek out the true professionals.

Those of us who dedicate endless hours in the horticultural service sector must constantly think of ways to expand business and stay ahead of the competition. As a result, we will protect the livelihoods we have worked so diligently to establish.

—The author is vice president of Zenk Country Landscapes, Granite Springs, N.Y. and co-owner of Locust Glen Garden Center, New Fairfield, Conn.

Cultural control of diseases in residential home lawns



Red thread

University.

Dollar spot



Seed selection, mowing, fertility, irrigation and aerification can all affect the incidence of turf diseases in home lawns, says Dr. Karen Plumley of the plant pathology department at Cook College, Rutgers

If homeowners indicate some resistance to their lawn/landscape company using chemical disease controls, there are options, she says.

Here are steps you should take:

1) Place a plant (turf) in an area that is friendly to its growth. In other words, select the right turf type for the right lawn. And select disease-resistant cultivars.

2) Mow with sharp blades.

3) Give the turf a "balanced diet" of fertilizer to increase plant strength.

 Irrigate deeply and infrequently. "Irrigation is one of the practices most misused," Plumley notes.

5) Aerify to control thatch. "Thatch build-up leads to shallow rooting and water build-up that further weakens the plant," she says.

Here are some common plant diseases,

their symptoms and their cultural controls, though she recommends supplemental chemical control in most cases:

Leaf spot/melting out (Drechsleria spp.) most affects Kentucky bluegrass. It appears as yellow lesions with bluish borders on the leaf tissue. Cool, moist weather, excessive nitrogen, thatch and low mowing are conditions that favor leaf spot. To control, you may want to raise your mowing height, avoid over-fertilizing, avoid light frequent irrigation, control thatch through aeration or verticutting, use resistant cultivars and apply recommended fungicides.

Dollar spot (Sclerotinia homeocarpa) most affects Kentucky bluegrass, bentgrass and ryegrasses. It appears as lesions with bleached white centers and brown borders with white halos. Conditions favoring dollar spot are warm weather, high humidity, dew, low nitrogen, moisture extremes, thatch and low mowing practices. To control, you should maintain proper fertilization levels, avoid drought stress with irrigation, control thatch, use resistant cultivars and apply recommend**Brown patch**

ed fungicides.

Brown patch (*Rhizoctonia solani*) appears most frequently on bentgrass, ryegrasses and fescues. You will note circular patches of thinning turf and tan lesions with brown borders. Brown patch shows up in hot, wet weather, periods of high humidity, over-nitrogen-fertilized lawns and heavy thatch. To control, use good water management practices, avoid excess nitrogen, control thatch, mow at the proper height and apply recommended fungicides.

Red thread (Laetisaria fuciformis) will affect bentgrass, bluegrass, ryegrasses and fescues. Patches with a reddish cast will appear, and you will actually be able to see red threads, reproductive structures of the fungus, in the turf. It will appear under conditions of low nitrogen fertility, free moisture, low temperatures, drought stress and with the use of some plant growth regulators. To control: maintain adequate fertilization, maintain pH, use resistant cultivars, prevent drought stress and apply recommended fungicides.

-Jerry Roche

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tuactions and not getting much proti from them, reevaluate your market niche, Once you establish your market niche you should aggresstvely market to al prospects in that niche. Beware of leads out side of the identified niche, and approach those prespects accordingly because the may require valuable time away from cus bomers in your niche. Attempting to salist prospects not in your niche may be boll expensive and frustrating.

continued on page 24

LAWN & LANDSCAPE INDUSTRY

Dealing with low-priced competition

Experienced LCOs know

how to deal with the new

threat from large

companies which become

low-ballers in the market.

by Ed and Aaron Wandtke

How to compete with lawn care companies that offer very low prices is an issue that seems to resurface each spring.

Making a profit when dealing with a low-priced competitor is possible, but it requires increased attention to the market you are serving.

As competition heats up and prices decline, many lawn care companies are illprepared to react, even though lawn care customers still seek what they've been seeking for years: a thicker, greener, weedfree lawn from a company that cares.

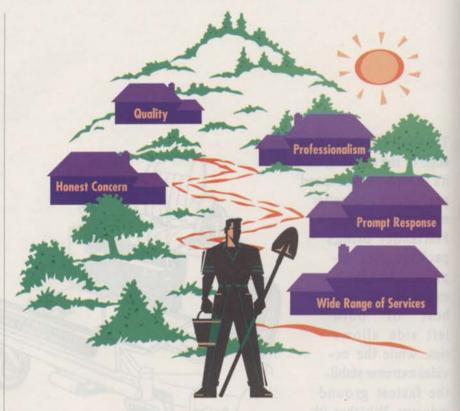
Can your company deliver what the customer wants, in light of the lower prices offered by the competition? How can it survive in this apparently price-sensitive market?

For many years, it was thought that the number of potential lawn care customers in any particular market was fixed. But industry pricing is causing this to change. In addition, the largest do-it-yourself (DIY) retailer, O.M. Scotts, is steadily increasing its prices. So the price spread between DIY and professional service is slowly merging, and new homeowners are considering affordable professional lawn care.

As the owner of your business, you need to know why customers choose your company. Have you surveyed them? What demographic or geographic profile have you developed on them?

Your 'position'—A variety of niches (or positions) are available in each market, so you need to identify yours.

In the early 1980s, Barefoot Grass defined its niche as the high-priced company. ChemLawn was looked upon as the high-end of the mid-priced companies. One-person operations were understood to offer the lowest prices. However, regulations, certification, IPM, insurance, and other changes are causing companies to



reposition in most markets. How is your company adapting to the changing methods of competition in your market?

The pricing tactics of competitors are the basis of frequent complaints among LCOs. Unique in the 1990s is a new twist on the low-price issue: how to not only deal with the *smallest* companies offering the lowest prices, but how also to deal with the *largest* companies offering the lowest prices.

Just because some people seek the lowest price doesn't mean that everybody does. For instance, some car-owners buy the lowest-priced car and run it until it drops. Yet more higher-priced automobiles are being sold today than ever before.

One LCO in Kansas City agrees with this wife that lower prices are affecting their business in a positive manner. Because of an increasing number of phone inquiries, they were forced to hire a new office employee. More repeat customers are also calling the office regularly to ask questions and chat. Price is discussed with new prospects calling the office, but once the program is explained and their lawn personally inspected by a professional, price is no longer an issue. Understanding your niche in the market will enable you to identify the buying pattern customers use when evaluating lawn care options. They are often willing to explain why they chose your lawn care company, if you ask. Knowing this important information will provide valuable insight for determining future prospects.

Make it so—Defining the market niche can be easy. Although a company may provide services relating to grass maintenance, landscape design, fertilization, sprinkler systems or general maintenance, a niche exists somewhere in this mix.

Do a percentage breakdown by both time and profitability for each service. If you're spending more time on certain functions and not getting much profit from them, reevaluate your market niche.

Once you establish your market niche, you should aggressively market to all prospects in that niche. Beware of leads outside of the identified niche, and approach those prospects accordingly because they may require valuable time away from customers in your niche. Attempting to satisfy prospects not in your niche may be both expensive and frustrating.

continued on page 24L

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LAWN & LANDSCAPE INDUSTRY

COMPETITION from page 22L

New for the 1990's: how to

deal with the largest

companies offering the

lowest prices.

If you discover your market niche is too small or another company is aggressively marketing to it, be prepared to change. You may want to specialize in more than one niche, to allow the company to shift its efforts according to customer demand. (Price-conscious customers may not be concerned with the quality; likewise, quality-conscious customers may not be concerned with price.)

Selling against price—Most LCOs are not prepared to deal with price shoppers, but it can be done by telling them the other factors to consider when evaluating a company: things like quality of service, professionalism, timeliness, cleanliness, and ability to answer questions.

Train employees how to communicate these positive attributes of your company to prospects. Preparing them to handle the pricing issue will help ease the communication between both the employees and the prospects.

Regardless of the tactics engineered by your competition, an understanding of your niche and where exactly your company fits in relation to the competition will help define your potential market share.

Keep in mind that the lower prices initiated by yourself and the competition are not likely to have significant impact on your market share this year.

And remember: the lowest priced company in a market usually has the highest customer turnover.

—The authors are principles in Wandtke & Associates, a green industry consulting firm headquartered in Columbus, Ohio. For more information, phone (614) 891-3111.

PLCAA's dynamite idea: partnering with the EPA

by Ron Hall, Senior editor

• Lawn care professionals may soon be showing customers another side of their environmental concern through a unique PLCAA/EPA partnership.

The program is the EPA's Pesticide Environmental Stewardship Program. It promotes the wise and responsible use of pesticide products. The Professional Lawn Care Association of America is the first green industry group to partner with the U.S. Environmental Protection Agency in the program. To date, most program participants have come from ag grower groups and right-of-way maintainers.

"We're developing our environmental stewardship strategy now. When it's approved, PLCAA members can publicize their participation," says Thomas Delaney, PLCAA government affairs director. In other words, PLCAA members who participate in the program and meet its criteria will be able to tell their customers that they are a part of the EPA program.

PLCAA earned the right to offer the program to members because of its ongoing efforts to educate the public to the benefits of healthy lawns, promote sensible lawn care practices and to reduce the risks of pesticide use, said Delaney.

"I applaud the steps your organization has already taken toward reducing the risks from the use of pesticides," wrote EPA's Daniel M. Barolo, director of the Office of Pesticide Programs, in a recent letter to PLCAA. "To further advance our common environmental goals, the next steps require collaborative pubic-private partnerships."

More about environment—PLCAA could yet help promote an Audubon Society program if it can get some financial help in printing the literature.

The Audubon Society of New York State's "Backyard Sanctuary" program is similar in purpose, if not in success, to its golf course sanctuary program. That procontinued on page 26L

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LAWN & LANDSCAPE INDUSTRY

PLCAA from page 24L

gram promotes wildlife habitat enhancement on golf courses. More than 1,000 course superintendents are participating in it. The Backyard Sanctuary program has attracted far fewer cooperators, said Audubon's President Ron Dodson, mostly because homeowners don't know about it.

Dodson spoke at the PLCAA Conference this past fall. He said Audubon would cooperate with PLCAA in supplying PLCAA members with Backyard Sanctuary material. He described the collaboration as a win-win-win situation. PLCAA provides its member companies with more consumer-friendly information, lawn care pros gain stature for helping enhance the environment, and ASNYS's sanctuary program reaches homeowners.

"I think it makes perfect sense for lots of different reasons for us to partner on this," Dodson told LANDSCAPE MANAGEMENT magazine.

Certification gains steam—About 600 people are registered in the University of Georgia-PLCAA turf certification program. There are now at least 45 Certified Turfgrass Professionals (CTPs), those that have successfully completed the course. Dr. Helen Mills, department head, U. of Ga.'s Community Learning Resources, said the correspondence course had attracted participants from as far away as Singapore and Israel. It covers such topics as mowing, soils, irrigation, pesticides, customer relations and more.

"We're exceptionally pleased with the response," said Mills. The program is in its second year.

"The UGA-PLCAA course is a must for someone entering the business and a great refresher for experienced LCOs," said Lou Wierichs, Jr., Pro-X Systems, Fox Cities and Green Bay, Wis. Wierichs was the first CTP.

Legislative Day—More than 80 lawn care professionals from 27 states attended PLCAA's sixth Legislative Day on the Hill this past Feb. 27-28. They met with former Republican Congressman Fred Grandy from Iowa before meeting with their own lawmakers. Grandy, still well-known for his role on the TV series Love Boat, told the LCOs to keep in close touch with their legislators. looking for in the next generation of leadership, but they are reasonably certain that they haven't found it yet," Grandy said. "Don't be convinced that the hurricane is over."

A Texas theme—New Frontiers in Lawn Care is the theme of 1995 PLCAA conference in Fort Worth this autumn. This is PLCAA's 16 conference. It runs in conjunction with the Green Industry Expo Nov. 12-16.

"For this year's conference in the Lone Star state, we've developed a frontier theme and agenda reflecting rapid changes and expanding growth in our industry," said Conference Chairman Bill Hoopes, Barefoot Grass Lawn Service, Worthington, Ohio.

Subjects covered in this year's conference include: IPM, employee considerations, the fate of pesticides, biological weed controls, environmental stewardship, understanding epidemiology and others.

Contact: PLCAA, 1000 Johnson Ferry Road, NE, Suite C-135, Marietta, Ga. 30068. Phone (800) 458-3466. Fax (404) 578-6071.

"Americans are not sure what they're

Predicting your financial future

by Dan Sautner

Throughout the life of your lawn or landscape company, you are continually asked to predict the future. Your banker wants to know how you will repay loans. You hire new employees when you expect more business. You purchase a new truck because you expect to need it in the future.

We often predict the future by relying on our intuition or gut feeling about the business. We consider the past, make adjustments for the new environment the future always brings, and then take a stand on where sales will be.

Something you can use as a tool to make your future predictions are cash flow projections. They are estimations of where cash will come from and where it will go.

These projections take a number of forms and have a number of uses:

Projections that can be broken down into three-month periods and cover up to five years are often used in major capital acquisitions (such as a new building).

Projections by the month for periods of two or three years are most commonly used when raising debt at a bank. The pri-



mary focus of these types of projections is when and how much excess cash will be generated. The lender will then use these to help him or her determine your ability to repay a loan.

□ The simplest forms of projections are those related to a single project, event or season. Time frames are contracted and often the information is restricted to only those elements affected. An example might be the decision to purchase a display booth at a trade show. Here the event and costs have a limited, easily-definable life.

Let's use this last type as an example to develop a cash flow projection.

First, determine what costs will needed to undertake the project. List these on a page, left-hand side, about a third of the way down the page. Label the column "Uses," and then make another set of columns ("Weeks") to cover the time frame. In this instance, since the trade show begins in eight weeks, use eight columns—one for each week—plus one for "Total."

Using the list of expenses, first work out the total money you'll need and record it in the "Total" column. You'll allocate it by "Weeks" later. If the total is realistic and obtainable, you can go to the next step.

On the top third of the page, on the far left, list the "Sources" of cash for this project. It may include immediate sales at the trade show or costs avoided while at the show. Then place the total in the "Total" column. Now add a final line in the sources, called "Contributions." Use this line to balance the sources of cash to the uses of cash. In a perfect world, sources will be higher than uses and no amount will be required here. In many cases, however, you will have to put cash into the venture, after determining, of course, if this type of contribution is possible.

Now, you break the total sources of continued on page 30L

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LAWN & LANDSCAPE INDUSTRY

FINANCIAL from page 26L

cash and uses of funds up among the eight weekly columns. Remember to figure when the cash will actually move, as opposed to when you incur the liability. Once these have been distributed, determine the totals for each weekly column.

You will now be able to schedule your contributions so each week is balanced in its source of cash use. In all likelihood, you'll find your contributions reach a high water mark early in the project. This amount may even exceed the total requirement. The accumulated contribution is the most cash you will need to undertake the project.

Now you can juggle the numbers if necessary. Remember that many projects, in and of themselves, are not positive cashflow generators. The reason they're undertaken is that they assist the company in its total operation and are an investment.

Cash flow projections can be valuable because they highlight the financial

aspects of a new idea or venture. You, then, must balance the investment with intangible benefits.

Once the project is under way, track the actual against the projection to help you budget and/or understand the effect of cost overruns.

For larger projects, of course, you'll want to get the help of your accountant.

-The author is chairman of Padgett Business Services, with more than 250 offices in North America.

Show and sell

By James E. Guyette, Contributing editor

Photographs of past and present pruning projects can help you sell the service to new clients, says the author of a newly published book on tree care.

This is especially true when large amounts of plant material need to be trimmed, according to Kris Medic, city landscape manager and arborist in Columbus, Ind. "That's a pretty scary thing to a property owner, to see that much coming off," she observes.

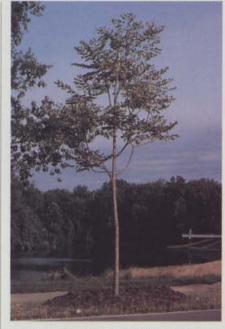
"Show them some before and after photos of pruning you have done. It makes a big difference for people to see what the results are because 'renovation pruning' is a big leap of faith."

Communicating with the customer remains crucial, and of course the landscape manager needs to have confidence. "Make sure they know what to expect," says Medic, who is author of the newly published *Rodale's Successful Organic Gardening Pruning* (1995, Rodale Press; \$24.95 hard cover; \$14.95 paperback).

According to Medic, organic pruning techniques tend to be no different than standard pruning techniques; the book's title reflects a series of Rodale publications targeted at organics.

The 160-page book is crammed with reader-friendly instructions of proper pruning and beautifully illustrated with 250 color photos and 50 drawings. Its thoroughness compliments nicely with the works produced by Alex Shigo in regard to tree care.

Medic's book belongs on the dashboard of any professional landscape manager



Restoration of Mill Race Park included planting 686 new trees in the 2½- to 3inch caliper range.

who offers pruning services.

"Many of the pruning techniques allow you to reduce your liability for disease and insect problems," Medic explains. "Good pruning is good business, and you can't go wrong when you do appropriate pruning. It will help you improve your bottom line."

In addition to containing advice of great use to landscape managers and arborists serving residential and commercial accounts, Medic's project can benefit those involved with government and institutional work.

The book provides practical selection techniques to use when choosing plant *continued on page 32L*

Safety is still first



 Author Kris Medic says tree pruning safety must be clearly communicated to workers.

"It's important to have a safety program," she says, "and make sure the employees know that safety is a primary concern."

Supervisors can set examples by adhering closely to safety standards. Using the correct equipment and wearing the right clothing is essential.

Something as seemingly simple as donning a pair of gloves can be critical. "I've seen—and had it happen to myself—a lot of sliced gloves." Medic recalls. "A sliced glove saves a trip to the emergency room."

Medic notes that many landscape managers tend to disdain proper handgear, and then injury strikes.

"I've seen it happen dozens of times over the years," she says, in reference to cut hands. "Some people are too proud to wear gloves," Medic observes. "It's not rocket science, but it does make a difference."

__J.G.

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TOUGH ON TURF INSECTS EASY ON ORNAMENTALS

LAWN & LANDSCAPE INDUSTRY

TREES from page 30L

materials for any area.

"They should be hand-picked for that site no matter what the project is," Medic insists. "No matter if it's a modern building designed by a world class architect or a lift station that serves a sewer plant."

Too many times plants are picked for the wrong location and for all the wrong reasons. Advance planning for plant selection should be a standard part of any project "so it's not going to burden the taxpayers with ridiculous horticultural choices," says Medic, an industry veteran who has a long list of awards and published works.

While some mistakes may take the form of being costly (such as planting fast-growing materials under powerlines that then require constant care) other blunders such as falling branches—are more serious.

Appearance, of course, remains a vital consideration. Medic says it's especially critical in the Indiana community she serves, which she describes as "a living museum of modern architecture."

Landscape managers in other towns can benefit by applying some well-thought

Pro Tur



Mill Race Park in Columbus, Ind. is a 98-acre park with many mature trees.

creativity to their assignments, and believes they tend to limit themselves when they should be using their horticultural skills to the utmost.

"People think that if it's low-budget and low-maintenance they have to end up with low expectations," she says. Not true. Do some research (such as reviewing the selection techniques in the book) and apply some serious thinking to the issue. "When we add to that challenge we come up with wonderful design solutions," she observes.

—To order Rodale's guide to pruning, call (610) 967-5171.

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32L Landscape Management, May 1995

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LM REPORTS

Herbicides, algaecides and colorants can combat aquatic weed overgrowth

Cattails, waterlilies and other aquatic plant life are always welcome in small quantities. But too many can be a control challenge.

by Terry McIver

If there's a body of water on any of the landscapes you manage, sooner or later you'll encounter aquatic weeds or algae.

Whether or not aquatic plants are a problem depends largely on the amount of growth present in the pond or lake. Several hundred native plants grow in low numbers and serve as food sources and protection for fish and wildlife. Such plants should ideally cover up to 40 percent of a pond or lake.

If allowed to grow wild with no control at all, aquatic plants can lower the quality of drinking water, clog natural waterways and manmade systems, reduce game fish populations, and throw cold water on water sports.

And nothing looks worse on a golf course than an algae-choked pond.

Drastic weed problems canal. require drastic measures.

In weed-choked waterways in Florida, for example, controlled burns are often used to reduce massive weed acreage (see sidebar).

For much smaller weed problems, there



Control methods- A worker applies Rodeo to brush growing in a roadside Photo courtesy of Monsanto

are two kinds of aquatic herbicides: systemics and contacts. Systemics enter the plant and disrupt growth or metabolic functions. Contact herbicides create chemcontinued on page 34

Great balls of fire!

 Aquatic weeds thrive in Florida. Control measures include harvesting, chemical control and-when you want to remove acres of weeds guickly-controlled burning.

Joe Hinkle, environmental specialist with the Florida Department of Environmental Protection, Lake City, Fla., often oversees burns of these marshy areas. In one recent project, 350 acres of sawgrass, maidencane and hardwood were burned out of Orange Lake.

"Existing airboat trails and a natural creek on the lake's east side were used as firebreaks," explains Hinkle. "Some firing was conducted from an airboat to enhance firebreaks in thick areas of vegetation and to act as a visual guide for the aerial ignition of the rest of the burn area.

"Aerial ignition was conducted using the Delayed Aerial Ignition Device, or ping-pong ball system."

It might sound like fun, but it's serious business. Small, plastic spheres containing potassium permanganate are injected with ethylene glycol and jettisoned from the copter. By the time the balls touch down,



combustion has begun inside, which then ignites the weeds. According to Hinkle, the aerial drops cut the time needed for the burn and reduces the amount of smoke.

They've got all kinds of toys for battling aquatic weeds in Florida. Another is what Hinkle calls a "cookie cutter," an airboat equipped with blades which clear a path through the water. Harvesters are another popular control device.

"Floating islands in Lochloosa Lake continually move around in the lake," says Hinkle. "These large mounds of weeds block public boat ramps and impede access to the public." In a trial project, the weeds were pushed to the public boat ramp, removed, and deposited to an upland site. The majority of these islands consisted of two exotic species of wild taro. alligatorweed and a native pennywort.

-T.M (Photo by Terry Sullivan)

AQUATIC ALGAECIDES AND HERBICIDES

SUPPLIER	PRODUCT	SPECIFICATIONS
ABI, Inc. Circle No. 311	Gel Pac	Algae control product the company describes as "environ- mentally friendly." Use one packet per week for every 10 acre- feet of pond water. Results seen within three weeks.
Applied Biochemists Circle No. 312	Various	Marketers of a line of algae and aquatic weed control prod- ucts, including Aquashade aquatic dye; Cutrine-Plus liquid algaecide with chelated copper; Weedtrine-D for emerged, submerged and floating plants; and Aquashade OA, a dilute formulation for garden ponds and fountains. The company has struck a marketing agreement with Rhone-Poulenc to market Aqua-Kleen granular aquatic herbicide.
Bonide Products Circle No.314	herbicides	Bonide copper sulfate pentahydrate; diquat.
Clean-Flo Circle No. 315	C-Flo 6	Formulation of beneficial microorganisms; bacterial enzymes; nutrients and synergists. Microorganisms feed on nitrogen and phosphorus, making it unavailable for algae.
Enviro-Reps International Circle No. 316	Bio-Restoration	Preventive and corrective bio-formulas for pollution control; consists of bacteria-enzymes.
Great Lakes Biochemical Circle No. 317	algaecides	Algimycin PLL-C chelated copper, available in liquid or slow- release tablet; Algimycin GLB-XII wettable powder.
Lakemaster Circle No. 318	Lakemaster	Complete unit, including air compressor and regulator; kills algae by reducing the amount of phosphorus in the water. Backup system kills residuals with copper low-dose elec- trodes and algaecide injections if needed.
Lesco Circle No. 319	HydroBlock	Filters wave lengths of sunlight to control weeds and algae in natural and manmade contained lakes and ponds, including ornamental, recreational fish rearing and fish farms.
Monsanto Circle No. 320	Rodeo	Controls a wide range of emergent-type plants growing in and around aquatic sites. Begins to show results two to seven days after treatment.
Parkway Research Circle No. 321	Algae Rid	New liquid aquatic algaecide, effective on a broad range of aquatic algae. Compatible with the company colorants, Blue Lagoon and Blue Lagoon WSB. Also markets Di-Quatic for ponds, lakes and drainage ditches where there is little or no outflow of water; also Consan Triple Action 20 algaecide.
SePro Circle No. 322	Sonar	Vegetation management in lakes, ponds and rivers.
Systematic Irrigation Controls Circle No. 323	algaecides	Ultra-Violet compound, an inorganic nucleic acid.
Terra International Circle No. 324	Subcide	Adjuvant designed to help herbicide cling to aquatic weed sur- faces for longer lasting weed control. The company's Riverside line includes 2,4-D Amine 4 to control a large vari- ety of broadleaf weeds in lakes.
Zeneca Circle No. 325	Reward	Diquat dibromide for use on both turf and aquatic areas, along the edges and non-flooded areas of ponds, lakes, drainage ditches and canals. Controls submersed, floating and marginal weeds; controls algae when used in conjunction with an approved algaecide.
Whitmire Research Laboratories Circle No. 326	PT 2000 Green Shield	Biodegradable compound to control algal, fungal, bacterial and viral plant pathogens in pools, fountains and water dis- plays. Also has non-aquatic applications.

LM REPORTS from page 33

ical imbalances, disrupt energy flow or cause physical damage to the plant surface.

Another chemical approach is to use dyes or colorants, which interrupt photosynthesis by acting as aquatic sunblocks.

You might choose to add an adjuvant to the herbicide mix, depending on the circumstances. These products are designed to improve the sinking, confinement and contact properties of aquatic herbicides. Ed Miller, owner and president of Southern Weed Control, Deerfield Beach, Fla., has had good luck with Terra's Subcide adjuvant. "I use it for drift control when using Rodeo on submerged grasses, with copper algaecides and Diquat, " he notes.

"You want to keep the chemical where you put it, for as long as possible; that's my philosophy," says Miller, who has also been having success recently with the Aquashade dye, after "giving it time."

Biological control agents include two weevils (*Neochetina*), a fungus (*Cerco*spora) and the water-hyacinth mite

Four types of aquatic weeds:

Emergent: These plants grow above the water in shallow areas. Many are not true aquatic plants, and could survive out of the water. Examples: cattails, arrowhead; spikerush; waterlily, bulrush.

Submerged: Rooted at the bottom and are completely underwater. Submerged weeds are usually "flaccid" and lack rigid cellular tissue. Flowers, if present, may extend above the water surface. Examples: pondweeds (sago/ small/curly-leaf/American);widgeon grass; southern naiad; coontail; hydrilla.

Floating: Plants with leaves that float on the surface and are rooted on the bottom, as well as free-floating plants. These require water to live. Examples: duckweed; water hyacinth; common salvinia; water lettuce; yellow and white water lilies.

Algae: Algae has no true leaves, stems or root systems. The most common type found in golf course ponds is filamentous algae, also referred to affectionately as "pond scum." Other examples: planktonic algae, which resembles pea soup, and pithophora, which grows in clumps and resembles steel wool. —*T.M.*

LM REPORTS

(Orthagalumna).

Fertilizers—Inorganic fertilizers can control underwater vegetation in the southeastern U.S. The theory is that the fertilizer will produce a "bloom" of microscopic algae which will shade out rooted submersed vegetation.

Excellent results have been obtained with this method in relatively infertile impoundments in southern Illinois, by the addition of a triple superphosphate. The fertilizer is applied before the growing season, and additional applications are made to maintain a "bloom" of algae so numerous that your hand can't be seen when submerged to elbow depth. This method is not recommended for all bodies of water, as it could make the problem worse, and will make the water unfit for human consumption.

Inspect first—The most important first steps in a management program are to learn the most common species of nuisance plants and regularly inspect the entire body of water. Your next move is based on what you find.

Stage of plant growth, water temperature and weather conditions are the three main factors to consider before you apply products.

Initial treatments to control aquatic weeds work best when applied before weeds are fully grown. This is about May 1st in southern areas and June 1st in northern areas.

One exception to this is Rodeo, which is best applied to aquatic plants "at or beyond early-to-full-bloom stage of growth." The application of Sonar is an other exception. Apply "prior to initiation of weed growth or when weeds begin actively growing."

For best results, most chemicals should be applied early in the day under sunny conditions. Water temperatures above 60°F are recommended. Check all product labels for further information regarding water temperature and weather factors, and for further application suggestions.

-Sources: "How to Identify and Control Water Weeds and Algae," edited by James C. Schmidt. The book is wellorganized, with information on various types of aquatic weeds, treatment options and diagrams. Cost is \$6.95; call Applied Biochemists at (800) 558-5106.

Illinois Department of Conservation's Department of Fisheries: "Aquatic Plants, Their Identification and Management."

POND AND LAKE COLORANTS

SUPPLIER	BRAND NAMES	DESCRIPTIONS
Applied Biochemists Circle No. 327	Aquashadow Lake & Pond Colorant	Blended formulation of water soluble dyes packaged in convenient water sol- uble packets. Beautifies murky, cloudy or off-colored water with a pleasing nat- ural aqua-blue tint. Complete, even dis- persion occurs within hours.
Becker Underwood Circle No. 328	Lake Colorant WSP	Concentrated blend of dry-flowable col- orants in easy-to-use water soluble packets (each treats one acre-foot of water) which eliminate need for mea- suring or any applicator contact. No mess. No stained hands or clothing ruined. No plastic jugs for disposal.
Clean-Flo Laboratories Circle No. 329	Sky Blue Lake Dye, Sky Blue Green Lake Dye	Organic dyes that enhance natural beau- ty of your pond or lake. Can be used to hide submerged plants from view and to speed up removal of nutrients when used with Clean-Flo Multiple Inversion. Compatiable with chelated copper algae- cides and most other chemicals used in aquatic environment.
Lesco Circle No. 330	Lake and Pond Colorant	Concentrated blend of dry colorants in pre-measured water-soluble packets. Clean, convenient to use. Transforms pale or off-color water into a natural- appearing deep blue. Treated water is non-staining and may be used for recre- ation and turf irrigation.
Parkway Research Circle No. 331	Aqua Clear Products	3 choices: liquid concentrate, super concentrate or water soluble bags. Adds natural beauty to ponds, lakes, foun- tains and lagoons by coloring them beautiful blue shade. Will not stain birds or fish. Once dispersed, will not disrupt fishing, swimming, irrigation.
Precision Laboratories Circle No. 332	True Blue Lake & Pond Dye	Available in one-gallon containers or water-soluble packets (SoluPak) for easy tossing. Highly concentrated. Odorless and biodegradable. Non-toxic fo fish, birds and animals. Long-lasting natural, dark aqua blue coloring to ponds, water hazards, lakes and fountains.
Terra International Circle No. 333	Terramark Lake Colorant	Concentrated blend of dry flowable col- orants in pre-measured water soluble packets. One packet colors one acre foot of water. Transforms pale, dirty, or off-color water into a natural-appearing blue. Fish, waterfowl and animals not harmed. May be applied to areas used for irrigation.
United Horticultural Supply Circle No. 334	Turfgo Aquablue	Available in one gallon liquid containers or water soluble packets which are clean and easy to use. No container dis- posal problems. Harmless to fish and wildlife. Swimming and other recre- ational sports approved following use.

Chart compiled by Ron Hall



Reel grinding for turf health, beauty

by Don Lindenfelser

Reel mowers are precision machines that need daily maintenance to retain the turfgrass's well-groomed appearance. The scissor-like shearing action of a reel mower is only possible if the reel and bedknife are sharp and the proper reel-to-bedknife clearance is maintained.

Cutting action begins as the bedknife positions the grass to be cut at the cutting edge. The reel then pulls the grass toward

the bedknife where it is sheared by the cutting edges as they pass one another.

For the grass to be cut at the proper height, it must contact a bedknife with the proper angle at the cutting edge, so you should grind a 5 percent relief angle on the front face of the bedknife. Without a relief angle, the blade of grass will contact the lower edge of the bedknife and bend over at too much of an angle prior to being cut. When mowing greens, where very small cuts are being taken, an improperly aligned bedknife may not capture the grass at all, and no grass will be cut.

Close examination of the reel-to-bedknife relationship reveals two square edges passing one another with approximately .002 of an inch clearance. This clearance is necessary because:

□ If the reel contacts the bedknife, the square (sharp) edge of the reel and bed-knife will roll over, becoming dull.

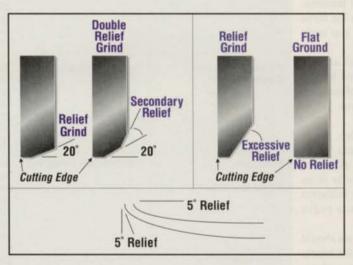
Contact between the reel and bed-knife generates heat which can distort the shape of the bedknife, and cause the bed-knife to draw closer to the reel, resulting in the cutting surfaces rolling over more, and more heat being generated in the bedknife.
 Drag produced by an improperly

adjusted cutting unit may result in an unacceptable clip ratio, undue strain on drive mechanisms and premature wear of the cutting unit.

Reel and bedknife grinding—Reel and bedknife grinding are used to:

restore the cylindrical shape of a reel that has become cone-shaped due to improper adjustment of the reel-to-bedknife clearance or due to worn reel bearings;

□ restore the edge when the grass is not being cut across the entire length of the bedknife due to nicked blades;



restore the edge when the lack of frequent backlapping allowed the edge to be rounded beyond the capability of the backlapping procedure to restore the edge; and

restore the edge when the reel-tobedknife clearance has been improperly adjusted allowing the reel to contact the bedknife.

Relief grinding—Relief grinding restores the factory relief angle to prolong cutting unit life and promote fast betweengrind sharpening (lapping). To grind a cutting unit without relief is doing half the job, and maintenance costs will increase due to the constant metal-to-metal contact of the "flat" ground reel blade. John Deere recommends relief grinding the reels before spin-grinding to:

□ Reduce the blade contact area, resulting in less friction, thus requiring less horsepower to drive the reel;

Ensure longer wear life;

□ Cut time required to backlap:

Reduce pulling and tearing of the grass as the unit becomes dull from use;

Provide an area for backlapping compound to be trapped to backlap reels more effectively;

Remove metal from the trailing edge

of the blade forming an angle (the relief angle) to reduce the contact area of the cutting edge; and

□ Allow the operator to true a reel (make it round), when backlapping, if a blade is .001 inch to .002 inch too high.

B a c k l a p p i n g — Backlapping is used to sharpen the cutting edges when grinding is not necessary. Backlapping, as compared to grinding, removes a very small amount of metal and requires less time.

The backlapping procedure is accomplished by spinning

the reel backwards while applying special abrasive compounds to the reel. Usually, coarse compounds are used initially, followed by a finer abrasive for final honing.

John Deere recommends backlapping after spingrinding to remove burrs and rough edges left from the spingrinding procedure. Backlapping produces a honed edge that will cut the grass evenly and leave the tops of the grass with clean, straight edges.

The cutting unit should be inspected, backlapped, adjusted and checked daily for a uniform cut along the complete length of the bedknife. The adjustment should *continued on page 38*

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2/95 SHAM

SHARPENING from page 20

allow the reel to turn freely without dragging against the bedknife. Metal-to-metal contact will generate heat, causing the reel to expand, intensify the dragging and produce more heat. This vicious cycle will quickly "shut-down" the mower.

Reel and bedknife sharpening— Sharpening is necessary when the grass is not being cut cleanly due to dull bedknife and/or reel blade edges, or when turf streaking is apparent, caused by the bedknife and reel not cutting the full width of the blade due to nicks, bends or uneven wear.

Lap when the relief angle remains and edges are rounded only slightly. Grind when no, or very little, relief angle remains on the reel blade and/or the bedknife relief angle is minimal or non-existent.

Precision grinders—Many grinders on the market today provide an acceptable quality reel and bedknife grind, but this is not equivalent to a "factory" precision grind. At the John Deere, Horicon, Wis., factory, the reels and bedknives are ground on very precise industrial grinders that are mounted to an independent concrete bed over 12 feet deep to eliminate vibration. Though a grinder of this quality is too expensive for most golf course budgets, superintendents are demanding as close to a "factory grind" as possible to provide the highest quality turf for their players. Therefore, it's important the reel and bedknife grinders be set up properly!

The grinders should be kept as clean as possible to prevent premature wear and maintain their precision design. A separate grinding room in the equipment maintenance building helps to protect the reel and bedknife grinder. Level the grinder on a flat concrete floor and bolt it down securely.

The capability of the reel grinder to perform relief and spin grinding operations is paramount to provide the highest quality cut and longest possible interval between grinding periods. Look for a precision grinder that has coolant to prevent overheating the metal, which could cause brittleness. The coolant also reduces the grinding dust. Among other key features to consider are plexiglass shields, machine "shutdown" capabilities, and cutting unit lift attachments.

To provide the best possible quality of turf, it's imperative that reel and bedknife maintenance operations be performed routinely with well maintained precision equipment and highly skilled operators. With tolerances of .001 to .002 of an inch between the reel and the bedknife, precision is a must.

—Don Lindenfelser is based in John Deere's Horicon, Wis., facility and serves as field service coordinator for the Golf and Turf Division.

Reel grinding tips

 "Dress" the grinding stone (per the manufacturer's recommendation) and replace it regularly to ensure precision grinding.

2) Make sure the grinding stone is entering from the back side of the reel blades to obtain the proper grind.

Inspect and/or replace the reel bearings and seals before grinding.

4) Perform the relief grinding operation first and then spin grind. Follow the manufacturer's specifications when performing these grinds. John Deere recommends 20 degrees relief on the reel blades and 5 degrees relief on the bedknives' top face and front edge.

5) Avoid rapid, quick grinding as this procedure may not provide a sharp edge (square corner).

6) If the metal becomes discolored as you are grinding, too much material is being removed at one time.

7) After grinding, wash the cutting unit reel thoroughly to remove the grinding dust. It's essential the grinding dust be removed in the reel bearing journal areas to prevent premature reel bearing wear.

-D.L.

Sharpening rotary mower blades

Rotary mowers cut grass as the blade's cutting tip, moving at a high velocity, impacts the grass blades. For a quality cut, the cutting edge of the mower blade must be sharp.

Commercial cutters should install new or resharpened blades at least once a day. This is required for a professional quality cut.

A blade's cutting edge varies in length but is usually several inches long. The first inch does most of the cutting. Assume you are mowing with a walkbehind mower with a blade at 3250 rpm. At this speed, the blade rotates at 54.17 revolutions per second. Also assume that the mower is going forward at 2 mph or 3 feet per second. With two cutting edges on the blade, the 54 rps equates to 108 cutting swaths per second. At 3 fps, each swath removed a %-th-inch strip of grass; therefore the interior portion of the cutting edge contributes little to the cutting process. Since the first inch does most of the cutting, it is important to get a good edge on this area.

With some of the popular mulching blades, the extended cutting edge recuts the clippings during suspension. It is also felt that the increased ground speed of riding mowers makes it beneficial to increase the length of the cutting edge.

Once the mower blade has been removed for sharpening:

□ Check the blade to assure that it is not bent and that it has the correct "attitude" in relation to the mower housing and the ground surface. (To check this, place the blade on a perfectly flat surface.) The blade should be straight, with the cutting tips lower than the heel (center portion) of the blade. Sharpen the blade by grinding the top surface only, maintaining the original cutting edge angle. Make sure all nicks are removed and that the cutting tips are smooth and sharp.

Make sure the blade is balanced. Use a commercial balancer or place the blade on a pin clamped in a vise. If one end of the blade swings downward, material must be ground gradually from the heavy end until the suspended blade will remain in a fixed position.

Properly reposition the blade on the mower. Tighten the retaining nut securely.

—Contributed by Don Lindenfelser of John Deere, Horicon, Wis. and Devon McGee, product engineer at Encore Manufacturing Co., Beatrice, Neb.

Perking up foot-weary turfgrass

Using wear-tolerant

species and the correct cultural practices goes a long way, says Cornhusker

expert.

by Ron Hall

 Want to put spring and color back into your heavily-trafficked turfgrass? Dr.
 Robert C. Shearman gave some excellent suggestions at the GCSAA Conference this past February.

Shearman, executive director of the National Turfgrass Evaluations for the University of Nebraska, explained that heavy foot, spike or vehicular traffic crushes, shears and/or tears turfgrass plant tissue. This damage is immediate and apparent. To some extent, he explained, plants can heal themselves, depending on their recuperative potential and the conditions under which they grow.

Traffic, however, often creates a less obvious but more chronic condition—soil compaction. "The turfgrass is then in a lesser position to tolerate other kinds of stresses," he said.

Shearman pointed to research done by Dr. Robert Carrow of the University of



Dr. Shearman: Aerification plays a crucial role in turf recuperation.

Georgia, (and others), proving that turfgrass growing in compacted soils produces fewer roots and a shallower root mass. Compacted soils limit the amount of moisture and nutrients a turfgrass plant can draw on, explained Shearman. Both percolation and infiltration rates are decreased. Under these conditions aerification plays "a critical role" in maintaining acceptable turfgrass, he insisted.

Other factors to consider when managing trafficked turf include:

□ Turfgrass species. Some species, indeed some varieties within a species, tolerate wear better than others. Warm-season turfs like bermudagrass and zoysiagrass generally tolerate wear better than more-upright-growing cool-season turfs. But dormant bermuda and zoysiagrass both have slow recuperative potential. Improved perennial ryegrasses tolerate wear and recover from injury rapidly. Check with local university researchers; consult with industry representatives for specific selections.

□ Mowing height. Mow at the higher end of the acceptable range.

□ Irrigation. Compacted soils will require lighter and more frequent irrigation, or at least until the structure of the soil is improved by aerification and the addition of soil amendments. An application of gypsum can be helpful on soils with high saline/sodium levels.

□ Fertilization. Heavily-trafficked turf may require as much as 30 to 40 percent more nitrogen, but managers must be careful not to overfeed the turfgrass. "If you're meeting the nutritional needs of the plant you're increasing the verdure, the density of the turf stand, the load-bearing capacity of that turfgrass," said Shearman. "If you exceed the amount that it needs, you have a tendency to get succulent, watery tissues that are susceptible to traffic injury and stress."

□ **Potassium.** Generally, increasing the rate of potassium that is applied to turfgrass during the growing season—matching even the amount of nitrogen used increases turfgrass wear tolerance.

"It (turf traffic) is not something you can deal with with a business-as-usual attitude," said Shearman. "You really need to look at things a little differently. You have to adjust your management practices."

Supers can help 'manage' traffic



Coldiron: traffic=\$\$\$

 Jerry Coldiron, CGCS, says that superintendents knowing the financial operation of their golf courses will have more input in management decisions affecting traffic on their courses

One example is the spacing of tee times: tighter tee times put more golfers on the course and generate more revenues.

"The amount of play directly influences the quality of our product (the course). So why shouldn't we deal with this?" asks Coldiron, superintendent at Boone Links (27 holes) and Lassing Point (18 holes) courses in Florence, Ky. Superintendents, in fact, should be in the best position to determine the optimum number of rounds for their courses, says Coldiron.

Equally important, superintendents should be aware of the number of rounds

needed to generate enough revenues to meet course expenses, reduce debt and finance capital improvements.

"We superintendents need to see and understand the big picture, to focus in on the dollar portion of our operations," he insists.

Today's superintendents must be able to support their positions with accurate and complete data, including financial data. This makes them valuable members of the management teams at their courses.

After all, emphasizes Coldiron: "The success and failure of all golf courses revolve around the course conditions."

And this is no less true at the public courses where golfers still expect excellent playing conditions but at very reasonable prices. -R.H.

Growing wildflowers can be the most exciting kind of landscape enhancement

imaginable.

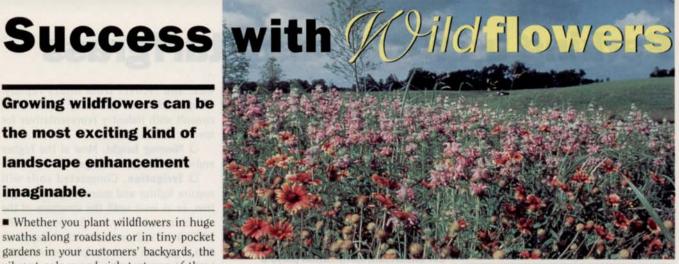
Whether you plant wildflowers in huge swaths along roadsides or in tiny pocket gardens in your customers' backyards, the vibrant colors and rich textures of these hardy plants are sure to please the eye.

Like any kind of landscaping, wildflowers require work and planning, but following these few basic rules will assure your suc-CPSS'

1) Determine your goals. Before you buy seed, first know what you want from your wildflower plantings. What is your purpose? Do you want three-season color? Textured plants for a winterscape? Only species native to your area? Are you planting to attract birds and butterflies?

2) Choose the appropriate site. Although it may be tempting to plant wildflowers in a difficult site where nothing else grows, first stop to consider why this is the case. Wildflowers are hardy, but they're not magical. Most wildflowers need full sun and moderately fertile soils that drain well but not too quickly. While it's possible to plant wildflowers in poor soil on a steep





All wildflower mixtures should include annuals which act as a nurse crop for slower-growing perennials which do not bloom until the second or third year.

slope in the shade, this presents a special challenge.

3) Choose the right seeds. Your wildflowers will only be as good as the seeds you sow. If you invest the time and energy to plant wildflowers correctly, don't ruin the project by using questionable seeds. Buy from a reputable dealer who can supply you with information about individual species and different kinds of mixtures. Most

mixtures include a combination of annuals and perennials. In general, mixtures for warm climates may include more annuals because they tend to reseed vear after vear. Cold-climate mixtures should contain fewer annuals because they will not readily reseed. Annuals should be included in almost every mixture, however, since they act as a nurse crop for the slower growing perennials which do not bloom until the second or third year.

4) Prepare the site

properly. It's highly recommended that you remove existing vegetation before you plant wildflower seeds. Till, if you can, to create a loose seedbed. If you can't till, at least scarify the top surface of the soil. You must eliminate weed seeds in the upper layer of soil by allowing them to germinate and begin to grow. The weeds should then be removed by chemical or mechanical means. Don't till again, or you may turn up new weed seeds and you'll have to repeat the process.

5) Plant the seed. Good seed-to-soil contact is essential for a high germination rate. For even distribution, mix seeds with sand, vermiculite or cornmeal. Scatter the seeds and rake them in lightly, being careful not to cover too deep.

Determining the best time to plant is important to the success of the project. Optimum planting times vary with climate and rainfall. Fall plantings offer the advantage of early germination and growth. In mild climates, plant before expected periods of rainfall. In cold climates, plant late enough so the seeds will not germinate until spring. A spring or early summer planting is also fine in most areas. Supplemental watering may be necessary for the first several weeks.

6) Water sufficiently. Many wildflowers are considered to be drought-tolerant, but all plants-wildflowers included-need sufficient moisture to germinate and thrive. Tell customers to keep the site evenly moist during the first four to six weeks, then gradually reduce waterings. If your area receives at least 30 inches of rainfall a year, supplemental waterings probably will be unnecessary after this initial period. If you receive less than 30 inches a year, tell customers to supply one-half inch of moisture each week.

7) Maintain the area. Wildflower plantings need to be mowed once, usually in late fall. The cut material may be raked or left in place to serve as a protective mulch. Overseed any bare spots, as needed, with one-half the normal seeding rate. If you weed regularly, irrigate during periods of drought and mow once a year, wildflowers will reward your clients with season after season of beauty and fragrance.

-Questions, comments and requests for a list of seed suppliers may be addressed to the Wildflower Group, A.S.T.A., 601 13th St. NW. Suite 570 South, Washington, DC 20005-1593.





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TECH

Four things to control diseases in cool-season turfgrass

Support the turf system: mow, mulch, fertilize, and use fungicides when all else fails!

by John Watkins, Ph.D., University of Nebraska-Lincoln

Plant diseases need a host, a pathogen, and an environment that supports their growth.

Environment is the key factor. Initial disease outbreaks and, often, their severity depend on temperature, moisture and



The plot on the left received no nitrogen. Notice severe dollar spot. The plot on right received 4 pounds of nitrogen/1000 sq. ft. during the season.



Mowing wet turf infected with brown patch caused the disease to spread along the mower's path.

humidity.

• An irrigation schedule that produces alternate wetting and drying of thatch stimulates the *Helminthosporium*-type fungi that cause leaf spot and melting-out.

• Close mowing, especially during summer, creates plant stress by depleting carbohydrate reserves, which play a key role in the plant's ability to defend against and tolerate disease.

• Extensive use of landscape trees and shrubs in turf areas reduces air movement, which increases humidity and extends dew periods that favor pythium blight and brown patch.

Fertilize properly—Kentucky bluegrass, the dominant cool-season turf in the temperate regions of North America, generally needs 2 to 4 lbs. of N/1000 sq. ft./season. Applications made in the late summer, fall and during dormancy are important when treating dollar spot, melting-out, summer patch and necrotic ring spot.

Studies at Michigan State University showed that applying 1 lb. of N per 1000 sq. ft. during each active growing month helped promote recovery of turf affected by necrotic ring spot or summer patch. Slow release nitrogen fertilizers and certain bioorganic fertilizers reduced necrotic ring spot intensity and helped promote recovery.

Probably the most critical fertilizer application is in the fall when shoot growth has stopped but roots are still actively growing.

Mow properly—Most cool-season turfgrasses do not like being mowed too short during the active growing season. The leaves generate energy needed for growth, reproduction and survival. Turfs mowed at 1 inch are more stressed and are more prone to disease than these mowed at 2.5 to 3 inches. Temperature is a key factor in turf pathogen activity, and the temperature is higher in a turf cut at 1 inch than in one cut at 3 inches. The taller turf has more biomass, is less dense, has better wear tolerance and has better recuperative capacity, all of which reduce its vulnerability to pathogens.

Mulch-Mulching recycles nutrients



A dull blade causes wounds that provide an entrance for pathogens.

and does not increase disease activity. Two key components to consider when mulching clippings are more frequent mowing and a mulching mower that chops the clippings into smaller pieces. Properly mulched clippings are used as nutrients by microorganisms that are antagonistic to pathogens. Long clippings can serve as a food base for pathogens and help pathogen mycelia move from plant to plant.

Use fungicides—Sometimes, no matter how hard a turf manager tries to follow good cultural practices, diseases still cause injury. Fungicides play a critical role in disease management.

Although turf managers have more than 30 different fungicides and fungicide combinations to choose from, no single fungicide product controls all major turf diseases. Products range from contact fungicides with 7- to 14-day residual activities to localized systemics and systemics that provide protection for 21 to 28 days.

In developing a fungicide program, consider which diseases present the greatest threat, which respond best to preventive treatment and which can be controlled by curative application. Some turf diseases are difficult to control once they are active. To defend against this, inspect the turf area regularly so you can detect early disease activity and make an immediate application.

> -The author is an extension plant pathologist for the University of Nebraska-Lincoln.

Continued on page 44

FECH CENTER

Preventive and curative fungicide programs for cool-season turf diseases

Disease	Type of program	First application	Products available
Leaf spot/ melting out	Р	Мау	chlorothalonil; iprodione; mancozeb; propiconazole; vinclozolin
Stripe smut	Ρ	April or October	cyproconazole; fenarimol; flutolanil; propiconazole; thiophanate-methyl; triadimefon
Necrotic ring spot	Р	When soil temperatures reach 60° at 2-inch depth	cyproconazole; fenarimol; iprodione; thiophanate-methyl
Fairy ring	Р	At first symptoms of green ring	flutolanil
Dollar spot	P/C	June for ryegrass/ bentgrass	chlorothalonil; cyproconazole; iprodione; mancozeb; propiconazole; thiophanate- methyl; triadimefon; vinclozolin
Brown patch	P/C	June for ryegrass/ bentgrass	chlorothalonil; cyproconazole; flutolanil; iprodione; propiconazole; thiophanate- methyl; triadimefon; vinclozolin
Summer patch	Р	When soil temperatures reach 65° F at 2-inch depth	cyproconazole; fenarimol; propicona- zole; thiophanate-methyl; triadimefon
Pythium blight	Р	June	chloroneb; ethazol; fosetyl-Al; metalaxyl; propamocarb
Rust	Р	July	chlorothalonil; cyprocanazole; mancozeb; propiconazole; triadimefon
Typhula blight	Ρ	October/November	chlorothalonil; cyproconazole; fenarimol; flutolanil; iprodione; PCNB; propiconazole; triadimefon; vinclozolin
Fusarium patch	Р	October/November	chlorothalonil; cyproconazole; fenarimol; iprodione; PCNB; propiconazole; thio- phanate-methyl; triadimefon; vinclozolin

P=Preventive C=Curative

Presented for information purposes only; no endorsement is intended for products listed, nor criticism for products omitted. Check with local specialists for specific recommendations. Read and follow label instructions. Chart provides approximate timing guidelines. Preventive treatment should be considered for turfgrass with a history of disease and should not be considered a blanket treatment for all turf. Remember, a successful fungicide program is one that is integrated with cultural practices. Proper fertilization and mowing may reduce the dependency on fungicides for disease control.

Source: Dr. Watkins

Fertility levels influence disease activity

• During growing months, a ratio of roughly 3-1-2 balance of nitrogen-phosphorous-potassium will usually meet the plant's demand for nutrients. When this ratio becomes inbalanced, particularly when the nitrogen component is excessively high or deficient, many turf diseases become more severe.

A study at the University of Nebraska-Lincoln showed that nitrogen levels of 6 and 8 lbs. of actual nitrogen (N) 1000 sq. ft./season caused significantly greater brown patch intensity than 4 or less pounds on a Rebel tall fescue turf. At 4 pounds of applied nitrogen, brown patch severity was intermediate and at two pounds the turf quality was acceptable although a low level of disease activity remained. Although the turf was more vigorous at the 6- and 8pound nitrogen rates, disease activity extended later into the season. Our findings are consistent with the objective of using tall fescue as a lower maintenance turf requiring one to three pounds of nitrogen per season. Two-thirds of the nitrogen should be applied as a dormant treament in the fall, followed by one-third in May.

Do not fertilize tall fescue during summer because of the threat of brown patch and the promotion of excessive growth during heat stress periods.

The presence of dollar spot and to some extent, leaf or stem rust often means the turf is under-nourished. At the University of Nebraska-Lincoln, we are studying the influence of nitrogen on dollar spot intensity on Penncross creeping bentgrass and crown rust severity on Manhattan perennial ryegrass.

Dollar spot was significantly less severe when the bentgrass received 4 or 6 pounds actual N/1000 sq. ft/season than at nitrogen rates of 2 pounds or less. Similar results were noted for crown rust severity on ryegrass. Crown rust was severe on plots receiving 0 or 2 pounds actual N/1000 sq. ft/season. It was moderately severe at the 4 pound rate, and rust severity was light on plots receiving 8 pounds of nitrogen. In both the dollar spot bentgrass and the crown rustryegrass ecosystems, the higher rates of nitrogen stimulated plant vigor, which allowed the turf to outgrow the pathogens.

-Dr. Watkins

Warm-season control: longer growing season presents special problems

Proper warm-season disease diagnosis is essential to effective turf

care. It can't hurt your

professional image, either.

by Gary W. Simone, Ph.D., University of Florida



Helminthosporium blight on bermudagrass.

Disease diagnosis on warm-season grasses offers quite a challenge to the turfgrass manager. The longer growing season allows for longer periods of disease incidence and potentially higher plant pathogen populations on established turfgrass.

When one considers the number of grass species grown and the use of overseed during the winter period, the task of disease diagnosis becomes very complex. And there are often overlaps in disease incidence periods as well as soil pathogen complexes affecting turfgrass sites.

Common diseases

Anthracnose— Primarily a disease of centipedegrass, but can invade bahiagrass, bermudagrass and ryegrass. It occurs in warm, moist periods, often in sites stressed from winter damage, fertility problems, or nematodes. Control methods include stress elimination, thatch removal and fungicides if needed.

Gray leaf spot—More areas of intensively maintained bermudagrass are being damaged by bermudagrass decline. It also invades St. Augustinegrass, and has been associated with "patch" or decline diseases of centipedegrass, zoysiagrass and bahiagrasses. Low mowing heights, nematodes, other disease or soil insects encourage this disease.

Brown patch—Perhaps the most widely-recognized turf disease, brown patch affects all warm-season grasses. This fungus is active between about 73-90 degree weather.

Brown patch is most damaging when temperatures are between 80 and 85 degrees.

Brown patch appears as three symptoms: as variably-sized spots that may span many feet in diameter; a second symptom is a "doughnut-like" ring, with healthy grass in the center. The third type is an aerial blight where tips of blades discolor as the fungus moves downward on the grass stems.

Maintain balanced fertility and avoid applications of readily available nitrogen sources during active disease.

Mow affected areas last and collect clippings if possible to avoid spreading the fungus. Dethatch turf, and apply fungicides at first sign of disease.

Cercospora leaf spot—Practically identical to grey leaf spot in appearance and timing. Initial spots are very small, and dark brown-to-purple in color.

As lesions mature, they turn tan in color, enlarge and can cause leaves to yellow, wither and die. Affected turf appears to thin. Yellow-green (common) selections

TECH CENTER

of St. Augustinegrass appear more susceptible than bitter-blue selections.

Avoid frequent, shallow watering.

Cottony blight—Considered a disease of cool-season grasses, this disease can be quite damaging on overseeded bentgrass/ryegrass and on bermudagrass. It thrives in a broad temperature range (68 to 95 degrees). Poor air circulation and poor drainage favor development.



Scattered, chlorotic fasicles are still alive in root rot (St. Augustinegrass).

Avoid maintenance while turf is wet, and avoid frequent irrigations.

Dollar spot—Occurs in all warm-season grasses, especially bermudagrass, bahiagrass and zoysiagrass, and grasses used for overseeding.

Favored in temperatures between 60 and 80 degrees, but warmer weather strains have been observed in Florida.

Free moisture from fog, dew or irrigation triggers disease development in sites with low nitrogen and potassium levels and ample thatch.

Affected areas range in size from one to two inches in finer grasses, to six to eight inches in coarser varieties.

Time irrigations for early in the day, and water deep when needed. Minimize thatch and fertility imbalances for longterm control.

Fairy ring—Caused by a variety of mushroom and puffball-type fungi. Occurs in any site where organic matter is an abundant food source. Fungi often produce a variety of irregularly-sized arcs or circles on turf sites. Fairy ring control *continued on page 47*

STEP ON IT

Kubota's GF1800 diesel front mower delivers more power with its easily engaged Foot-Control-4WD. This "on demand" 4WD locks in on-the-go by simply pressing a pedal.

The 18 horsepower GF1800, with its 3-cylinder diesel engine, is ideal for mowing jobs that demand maximum performance and efficiency with

outstanding maneuverability. There are three shaft-driven, mower choices – 48" mulching rear discharge mower, 54" side discharge and 60" side discharge. The independent hydraulic PTO clutch ensures smooth mower engagement, and includes a PTO brake.

The tight turning GF1800 features hydrostatic transmission, cruise control, tilt steering wheel and a hydraulic mower lift system to increase efficiency.

For the best quality cut, step up into Kubota's GF1800.



Circle No. 118 on Reader Inquiry Card

TECH CENTER

Warm-season disease diagnosis and control

Disease	Damage	Common fungicides
Anthracnose	Leaf, sheath, and tiller spots with yellow halo on centi- pedegrass	chlorothalonil; chlorothalonil + fenarimol; fenarimol; cyproconazole; mancozeb + thiophanatemethyl; propiconazole; thiophanate methyl; triadimefon
Bermudagrass decline	Chlorotic patches, 8-24" in diameter; thins during heat spells; roots shorten, feeder roots decline	fenarimol; propiconazole; thiophanate methyl; triadimefon
Brown patch	Round patch, smokey ring or aerial blight; fascicles rot at the base, with dark discoloration at base.	benomyl; chlorothalonil; chlorothalonil + fenarimol cyproconazole; fenarimol; flutolanil; iprodione; mancozeb; maneb; pentachloronitrobenzene (PCNB) propiconazole; thiophanate methyl; thiram; triadimefon
Cercospora	Small dark brown to purple	benomyl; chlorothalonil; mancozeb; maneb; thiophanate methyl
Cottony blight	Small, water-soaked, collapsed turf areas that mat and brown quickly. Disease spreads in the direction of traffic or surface water runoff.	chloroneb; etridiazole; fosetyl aluminum; metalaxyl propamocarb
Dollar spot	Small spots one to eight inches in diameter wilt and bleach to a straw color.	benomyl; chlorothalonil; chlorothalonil + fenarimol; cyproconazole; fenarimol; iprodione; mancozeb; mancozeb + thiophanate methyl; pentachloronitroben- zene (PCNB); propiconazole; vinclozolin
Pythium root rot	Gradual thinning, browning with progressive periods of wilt. Turf poorly anchored in site. Feeder roots decayed. Straw-color in St. Augustinegrass.	chloroneb; etridiazole; fosetyl aluminum; metalaxyl; propamocarb
Rhizoctonia leaf & sheath spot	Necrotic patch or ring forms under high temperatures; Leaf and sheath spot phase not distinctive.	Same as brown patch. Avoid using benomyl and thiophanate methyl.
Rust	Chlorotic leaf flecks that enlarge rapidly into linear pustules filled with red-to orange spores.	Cyproconazole; mancozeb; maneb; propiconazole; triadimefon

'ECH CENTER

WARM DISEASE from page 45

involves:

Tolerance: it is primarily a cosmetic disease.

□ Cleanup of the mushrooms when formed since some are toxic and represent liability situations.

Camouflage symptoms through nitrogen fertilization for the rest of the turf and/or water for the browned-out fairy ring sites.

Flutolanil (ProStar) is a newer fungicide being used to suppress the reproductive stage of these fungi.

Gray leaf spot—This is the primary scourge of St. Augustinegrass. The disease is favored by the hot, moist summer months, especially on turf sites with poor air circulation, low light, frequent light irrigation and high available nitrogen levels.

Grass cultivars derived from the bitterblue types are more susceptible. Symptoms begin as small brown spots on leaves, sheaths and stems. These enlarge to brown-to-ash colored lesions with dark brown to maroon margins.

Repeated fungicide applications are

Detection tips

- Inspect turf daily, in early-morning hours (especially after dew, rain or nighttime irrigation) are critical for perceiving physical sings of certain fungal pathogens like *Pythium* or the *Sclerotinia* complex.
- When you spot trouble, inspect the turf areas for the type of damage. Notice which part of the grass is affected, and how is the disease distributed.
- Use your knowledge of the fertility, irrigation and pesticide programs at each site, weather information and photographs prior to diagnosis and treatment.
- Have a three- to four-inch turf sample analyzed before applying control products. This sample can usually be analyzed within a calendar week, before the need arises for a second fungicide treatment.

-Dr. Simone

often needed during hot, moist months of summer. Irrigate deeply and only when needed early in the day to break influence the disease cycle.

Helminthosporium spots—Disease is favored by low fertility and thatch and disease spread is favored by frequent irrigations. Symptoms include leaf spots and a general melting out syndrome. Lesions are more numerous near the base of leaves and the crown of the plant. Manage thatch, provide balanced fertility, avoid frequent irrigations and use fungicides as needed. **Pythium root rot**—Thrives in poor drainage.

Symptoms are thinning or browning out of turf, with progressive wilt as a result of feeder root decay. Grass pulls up easily. Roots are discolored, soft-decayed, with few feeder roots.

St. Augustinegrass often turns strawcolored as a result of root rot.

-The author is an extension plant pathologist and associate professor at the University of Florida.

One Baby You'll Never Have To Baby.

ECHO SRM-2501 TRIMMER/BRUSHCUTTER

Day in, day out, no other landscaping tool takes the kind of punishment a trimmer does. And day in, day out, the Echo SRM-2501 keeps coming back for more. That's what makes it so special.

Actually, it was the input from professional landscapers that helped Echo design-in the features pros want most in a tough, commercial duty trimmer.

The rugged, powerful commercial duty Echo 24.4 cc engine, for example, with proven Echo Pro-Fire* Ignition and purge pump-equipped carburetor for fast starts.

And things like a quiet, low tone muffler, vibration-reducing engine mount, cushioned right hand grip and foam-covered left handle that make it a pleasure to use. Along with an overall weight of just 13.3 pounds.

The SRM-2501. It'll change the way you think about trimmers. For the Echo Dealer nearest you, call 1-800-432-ECHO (3246). Or write: Echo Incorporated, 400 Oakwood Road, Lake Zurich, IL 60047.

Circle No. 110 on Reader Inquiry Card



HOT

South, led by Atlanta, best new home market while Central is 2nd

DES PLAINES, III.—If you're into new home lawn installation/maintenance, the southern part of the country is the best place to be located in.

According to Professional Builder magazine, of all homeowners in the continental U.S. seeking new homes, 44 percent reside in the South, including 24 percent in the eastern seaboard states from Maryland/West Virginia to Florida.

Areas where homeowners are most likely to buy new homes, from most frequent to least frequent:

DE, WV, MD, VA, SC, NC, GA, FL24%
OH, IN, IL, MI, WI
TX, OK, AR, LA14%
CA, OR, WA14%
ME, VT, NH, CT, RI, MA
NY, PA, NJ
AZ, NM, CO, UT, NV, ID, MT, WY
KY, TN, MS, AL
ND, SD, MN, KS, IA, NE, MO

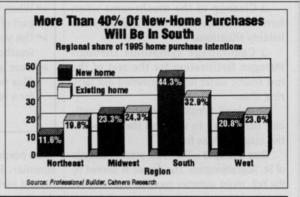
Home shoppers living in a metro area with a population of 2 million or more are most likely to choose new construction, according to the survey, which was conducted by National Family Opinion, Inc. Least likely to buy a newly-built house are home shoppers in areas with a population between 100,000 and 499,999.

Among major U.S. cities, Atlanta led the way in 1994 with 48.0% of its residents purchasing newly-built homes. According to Chicago Title & Trust's "Who's Buying Homes in America," the top cities in newhome buying in 1994:

Atlanta		 	48.0%
Phoenix		 	36.1%
Minneapolis		 	30.0%
Orlando		 	29.6%
Dallas/Ft. Work	th	 	29.5%
Seattle/Tacom	a	 	24.8%
Washington, D	.c	 	.24.7%

The information appeared in the April

issue of "Professional Builder," a Cahners Publishing Company magazine located here (telephone 708-635-8800).



Dr. Bill Daniel: teacher, inventor

WEST LAFAYETTE, Ind.—One of the giants of the turf industry passed away Feb. 24: Dr. William H. Daniel, professor emeritus at Purdue University, author, inventor and—most of all—friend to the industry.

Dr. Daniel, who had been semi-retired in recent years, remained active almost until the end. He was a frequent visitor at national and regional conventions of golf course superintendents and athletic field managers.

He developed both the Purr-Wick Water Management System and Prescription Athletic Turf (PAT), which is used in many major college and professional stadiums. He was senior author of the popular "Turf Managers Handbook." He was a Fellow in the American Society of Agronomy and received distinguished service awards from the Golf Course Superintendents Association, USGA Green Section and Midwest Regional Turf Foundation.

Dr. Daniel is survived by his wife of 51 years Gwen, son Donald, daughter Sue Eiler, two brothers and a sister.

Memorial funds, according to the

Midwest Regional Turf Foundation, can be sent to the Daniel Scholarship Fund at Purdue University or the Endowment Fund of the Federated Church, West Lafayette.

-Jerry Roche

New bermuda, centipedegrass

ATHENS, Ga.—Two new turfgrasses will be released this summer by plant breeders at the Coastal Plain Experiment Station in Tifton, Ga. They are TifBlair centipedegrass and Tift MI40 bermudagrsss.

TifBlair is a cold-tolerant centipede that grows well in acid soils. Its color, quality and green-up characteristics are similar to common centipede.

"This cultivar tends to grow faster and produce better quality turf than common centipedegrass at low soil pH in the 4 to 5 range," notes its developer, Wayne Hanna, a USDA research geneticist. "Winter-hardiness is one of the greatest needs for bermuda, especially on golf courses where the grass is cut short and frequently."

Tift MI40 is a fine-textured, cold-tolerant bermuda adapted to close mowing and resistant to mole crickets. It is intended for use on golf course fairways, athletic fields and home lawns, according to Hanna. Tift MI40 grows well as far north as Lexington, Ky. and Stillwater, Okla.

"This bermudagrass has nice color and a much finer texture than Midiron," notes Hanna.

For more information, contact the University of Georgia Ag Experiment Station, Athens, GA 30602.

HOT TOPICS

Publishing veteran named to head LM

CLEVELAND—Less than a week after he was named publisher of LANDSCAPE MANAGEMENT magazine, John D. Payne was sitting in the office of Crowley Lawn Care in eastern Cleveland. He spent two hours exchanging ideas with owner Phil Fogarty, and that's the type of active role Payne likes to see his magazines take.

"Our goal," says Payne, "is to serve landscape professionals throughout this industry by providing valuable insight and practical how-to information. We also want to tackle the tough issues—as you would expect an industry leader to



do. We'd like to make a difference in our readers' businesses.

"The work done in the green industry has a tremendous impact on quality of life and the environment. That's why we see our magazine's role as so important."

Payne brings 20 years of publishing experience to Advanstar Communications.

He's worked at Stagnito Publishing, Gorman Publishing, the former Gralla Publications, PennWell Publishing and Hanley-Wood. He spent 12 years in the \$340 billion food industry, as publisher of "Prepared Foods" and "Food R&D." For two years, he was associate publisher of "Architecture."

"We're delighted to have John here," says group publisher Alex DeBarr, "He's got a great track record of managing business publications, and he's a very creative person."

If you should find yourself at the other end of the phone with the new publisher, it's because he wants to visit with you and learn more about the industry. "And that gate swings both ways," he notes. "I want everyone to feel free to pick up the phone and call. And if you're going to be in Cleveland, we'd love to see you."

Advanstar Communications publishes 54 other specialized magazines and journals; produces and manages 70 exposition and conference events around the world; and sells database, reference and direct marketing products.

-Jerry Roche



PBI/Gordon has a new president and chief executive officer, **Richard E. Martin**, who has been with the company since 1982. **Everett Mealman** will continue as chairman.

The Scotts Company has become a supporting sponsor for the GCSAA television show "Par for the Course" on ESPN.

Gary Clayton is new business manager for turf and ornamental products at Sandoz Agro. He has previously worked in the green industry at Perma-Green, the PLCAA, PBI/Gordon and Pro Turf Specialties.

Harmony Products expanded its product line to include biosolids (mechanically dried sewage sludge) with its poultry manure-based products for the pro turf industry. The biosolid's analysis is 4-2-0.

Bob Leslie, a commercial representative for W.A. Cleary Chemical Corp., was "senselessly murdered in the Montclair, N.J. post office robbery" in March, according to company president **Barbara Cleary**. "We will all miss Bob very, very much and will remember him fondly." Donations for the education of his two young girls can be made to: GCSANJ Bob Leslie Fund, 66 Morris Ave., Suite 6A, Springfield, NJ 07081.

Feldmann Manufacturing promoted Clifford Feldmann from vice president to president. Former president Myrtle Feldmann is semi-retired, serving as secretary and treasurer.

Century Rain Aid irrigation company has added six branch offices/warehouses with the acquisition/merger of an Atlantic Irrigation outlet in Virginia and Professional Turf Supply in Atlanta. In addition, president **Wayne Miller** has been named to the board of directors of the Irrigation Association.





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This new video and brochure cover Toro's complete line of rugged, high-performance midsize and commercial mowers, riders, and zeroradius tractors.

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HOT TOPICS



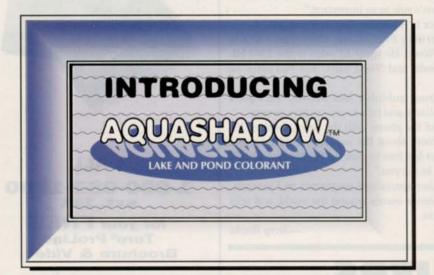
Useful videos and literature for the green industry

PESTICIDE CONTAINMENT...Advanstar Communications' new book, "Containment System Design: Chemical Storage, Mixing and Recycling," costs \$74.95.

The book, written by Frederic R.

Haskett, contains information that allows both large and small operators to design and construct an affordable, viable and safe pesticide handling facility. The book also explains how to prepare for the scrutiny of government regulators and how to comply

PRETTY AS A PICTURE



Proven Effective Beyond A Shadow of A Doubt

AQUASCADOW- is a blended colorant formulation in convenient WATER SOLUBLE PACKAGES that highlights your water for a picture perfect landscape.



Circle No. 103 on Reader Inquiry Card

with new regulations. To order a copy, phone (800) 598-6008.

CUSTOMER INFO... The Professional Lawn Care Association of America is offering a new brochure, "Tips on Choosing a Lawn Care Service" to members and nonmembers alike, though members receive a discount.

Other brochures that are available from the PLCAA cover a wide range of topics, from turf benefits to grasscycling to specialized videos. For more information, phone the PLCAA at (800) 458-3466 or fax to (404) 578-6071. A *free* product sourcebook and order form is available.

SAFETY BY VIDEO...The Associated Landscape Contractors of America has a nine-step video program on landscape safety available to the industry. Each video costs \$75 (\$50 for members) and can be ordered in English or Spanish.

The safety topics are: general safety, trim mowers, mid-mowers, power edgers, string trimmers, power hedge trimmers and backpack blowers. The entire package costs \$450 (\$300 for members).

To order, write ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091; phone (800) 395-2522 or fax (703) 620-6365.

SOD USES...Five informational fourcolor brochures about the best uses of turfgrass sod are available free from the Turf Resource Center. Titles are "Turf Installation Guide," "Why Are Most Lawns Now Sodded?," "The Dream Lawn Is Yours in Hours with Sod," "How to Establish a Lawn," and "Being a True Environmentalist Begins Right Under Our Feet."

To receive any or all of the brochures, mail a self-addressed stamped envelope to Turf Resource Center, 1855-A Hicks Rd., Rolling Meadows, IL 60008. Indicate which brochures you want; if you request more than three, two stamps will be needed.

ON TEAMWORK...McGraw-Hill just published a book titled "Teaming Up: Making the Transition to a Self-Directed Team-Based Organization."

Authors Darrel Ray and Howard Bronstein focus on employee teams that not only manage themselves successfully in the workplace, but also create extraordinary gains in productivity, efficiency and worker satisfaction.

The 247-page book retails for \$24.95. To order your copy, phone the McGraw-Hill order department at (800) 262-4729. Request ISBN No. 0-07-051646-4.

50 Landscape Management, May 1995

HOT TOPICS

INFO-CENTER from page 50

FREE SPRAY GUIDE...Hypro Corp., a leading American spray pump manufacturer, has just released a new spraying guide for all sprayer operators and manufacturers. The full-color, 16-page brochure is an excellent source of information on pumps, calibration, nozzles and pump placement for all five families of ag sprayer pumps.

The guide is *free;* to order, call or write Hypro at 375 Fifth Ave. NW, New Brighton, MN 55112; (612) 633-9300. Ask for Form 226.

WORKERS' COMPENSATION...Order the "Worker's Compensation Law Bulletin" and receive *free* of charge a "1995 Checklist for Cutting Workers' Comp Costs."

Now in its 18th year, the WCLB reports the most important, trend-setting court cases that, as explained, will help you defeat unjustified claims, avoid liability for negligence and prevent modification and reactivation of old claims.

The bulletin costs less than \$5 per month. It is available with a full-year

refund guarantee. For more information, write Qunilan at 23, Drydock Ave., Boston, MA 02211; or phone (617) 542-0048.

HERBACEOUS PERENNIALS... The Professional Plant Growers Association is offering the "Professional Guide to Herbaceous Perennials," a 28-page, full-color booklet designed to introduce landscape pros to using 63 recommended perennials. Authors are Dr. Art Cameron and Laura Coit of Michigan State University.

The brochures cost \$2 each for PPGA members, \$2.60 for non-members. Quantity discounts (more than 100) are available. To order, write PPGA, P.O. Box 27517, Lansing, MI 48909 or phone (800) 647-7742.

ON PESTICIDES... "The Users Reference Guide to Pesticides" is 200 pages jam-packed with information. Cost is \$27.95. To order, send check or Visa/MC number and expiration date to Thomson Publi-cations, P.O. Box 9335, Fresno, CA 93791; or phone (209) 435-2163; or fax (209) 435-8319.

EVENTS

JUNE

4-6: Park & Recreation Design Symposium, Kansas City. Phone: (414) 733-2301.

6: California Assn. of Nurserymen certification exam, Kings River College, Reedley. Phone: Laura Holybee, (916) 567-0200.

7: California Assn. of Nurserymen certification exam, American River College, Sacramento. Phone: Laura Holybee, (916) 567-0200.

15: California Assn. of Nurserymen certification exam, Marriott/Bishop Ranch, San Ramon. Phone: Laura Holybee, (916) 567-0200.

23-25: Plantec International Trade Fiar for Horticulture, Frankfurt, Germany. Phone: (069) 7575-6357.

29-July 2: FNGA Annual Convention, Disney's Contemporary Resort, Orlando. Phone: Linda Van Der Zee, (407) 345-8137.



Circle No. 112 on Reader Inquiry Card

GREEN INDUSTRY SHOWCASE

Wider floating deck eliminates scalping

Encore Manufacturing Co.'s hydrostatic rider is now available with a 61-inch deck.

The 61-inch Encore Rider, with zero turning radius, is powered by a 20 hp Kawasaki liquid-cooled engine, and an Eaton 771 dual-path hydrostatic drive.

The company says the Rider has a true floating deck design, which allows the mower to cut across rough terrain without scalping the turfgrass.



The full floating deck and a front axle trunnion delivers an exceptional quality cut and one of the smoothest rides possible from a riding mower.

Circle No. 191 on Reader Inquiry Card

Pallet carrier lifts large loads, travels fast

The Amaze-N-Tow pallet carrier combines the lifting power and material handling flexibility of a hydraulic fork lift, with the highway-speed transportation capacity of a large truck.

A 12-volt Industrial Marine battery powers the hydraulic lever operated lift mechanism, securing loads up to 4000 pounds in just minutes.

- Other features include:
- a 400-pound tongue weight;
- low center of gravity;
- wide wheelbase;
- fail-safe locking arms.

One person can transport heavy loads safely, by using an ordinary vehicle and conventional hitch.

Circle No. 192 on Reader Inquiry Card

New distributor offers savings on turf supplies

Yardway, a newly formed national supplier/distributor for the green industry, provides equipment, supplies and services that today's landscaping and lawn care companies need in a "one source" shopping environment.

Yardway offers purchasing memberships to landscaping and lawn care companies, which allows those companies to buy at lower prices. Non-members of Yardway are allowed to buy at regular prices.

Yardway offers member's access to the following lines:

MTD/Yardman: Ferris and Lesco mowers; Lesco fertilizers and seed; Union tools; DFS forms and stationery: Bush office furniture; JDI office furniture; Packard Bell multi-media computers; Nebs software; RainBird irrigation: various truck and trailer models.

Vision Benefits and travel discounts: are included.

Later this year, Yardway will open the Yardway Network, by which affiliates can obtain client referrals under The Yardway Network name and supplies and services. Circle No. 193 on Reader Inquiry Card

New power tool for curb trench preparation work

The Curb King sod trimmer from Tool Engineering & Manufacturing Co. eliminates shoveling curb paths by hand.



With a few passes, you can control the depth and width of a trench around existing flower beds, next to foundations, under fences and through grasses.

The tool is versatile and maneuvers well. The company has a complete line of concrete curbing machines, mixers and trailers.

Circle No. 194 on Reader Inquiry Card

One sturdy tool combines features of rake and shovel

The Shrake hand tool combines the features of a heavy duty shovel with those of a sifting rake.

The tool is designed to sift out unwant-





ed debris—such as rocks and leaves from good soil.

The heavy duty shovel can also be used for digging out bulbs from planters, and takes the place of the rake and shovel combination when doing preparatory work for landscaping and planter installation.

The Shrake is manufactured by Environmental Protection Developers, Inc. Circle No. 195 on Reader Inquiry Card

Endophyte-enhanced seed ready for 1995 season

Two new perennial ryegrass varieties are available from E.F. Burlingham & Sons.

Wizard is a high-endophyte variety best suited for short mowing heights and the turf traffic found on golf courses, athletic fields and seed mixes. It exhibits an excellent mowing quality, moderate leaf texture, and deeper dark green color. It will be of good use in southern overseeding programs and cool-season mixes.

Excel is a dark green turfgrass with a moderate level of endophytes. It has a fine leaf texture, with improved resistance to dollar spot and red thread diseases.

According to E.F. Burlingham & Sons, Excel exhibits more tillering, and has a semi-dwarf growth habit. It performs well alone or in mixes with dark green bluegrass and fine fescue varieties or in southern overseeding.

Circle No. 196 on Reader Inquiry Card

New fungicide manages turf, ornamental diseases

Terra's Aliette T& O fungicide controls several plant diseases in ornamentals, turf and around bedding plants.

Aliette T & O controls downy mildew, fire blight, and bacterial blight in ornamentals and bedding plants, when applied prior to disease development, and in conjunction with good cultural management.

The product can also be used as a systemic fungicide against pythium diseases such as blight and root rot, and yellow tuft on common turf on golf courses, sod farms and other areas.

Circle No. 197 on Reader Inquiry Card

Electric bunker rake quiet with no emissions

The Sand Star E, an electricpowered bunker rake, has just been introduced by Smithco.

The quiet, battery-powered rake is the first and only one of its type available to the golf industry, according to the company.

The Sand Star E is powered by six, 6-volt batteries, which store and deliver sufficient energy to handle bunker conditioning. The batteries can be recharged overnight.

The Sand Star E runs at a 10 mph forward speed and 5 mph in reverse. It comes with rear-wheel drive and a comfortable,

eneritionn be t a 10 mph reartable,

high-backed operator seat with a presence safety switch.

Circle No. 198 on Reader Inquiry Card

Mowers built with new features

Kubota Tractor Corporation's new FZ-Series of front mowers combine Zero Diameter Turn and Auto Assist Differential.

The FZ-2100 runs on a 20-hp, liquid-cooled diesel engine and hydrostatic transmission. According to the company, this was the first mower to offer the Zero Diameter Turn and Auto Assist Differential, which lets the operator switch automatically between two- and four-wheel drive.

The 2400 is built for use on all types of commercial and golf course landscapes. It features new, wider optional round-shoulder turf tires for increased stability and traction with minimal turf damage.

Circle No. 199 on Reader Inquiry Card



SHOWCASE



Drive system cuts brush replacement

Sweepster, Inc. has a new hydraulic drive sweeper for tractors, loaders and skid steers that reduces brush replacement time by 92 percent.

One person can replace a loaded core in 10 minutes on the QC series power sweepers. Sweepster has redesigned the mounting for the hydraulic motor that drives the brush core. A separate mounting bracket cradles the hydraulic motor and slides in and out of the brush core. Simply pull a pin, lower the arm support, remove the hydraulic motor mounting bracket and the brush is ready to replace.



Longer hydraulic hoses allow for the removal of the

hydraulic motor without unhooking the hoses, which protects the hydraulic system from possible contamination.

Circle No. 200 on Reader Inquiry Card



1.11.11	
101	AgrEvo USA Co 21G
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108	Ciba-Geigy Corp
109	Dixie Chopper
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	Dow Elanco7
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122	Sandoz Agro, Inc
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Circle No. 111 on Reader Inquiry Card

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FOR ADVERTISING INFORMATION AND AD PLACEMENT, CONTACT: Stephanie Stiggers-Smith, 216-891-2719 1-800-225-4569 (ext. 719) Fax 216-826-2865 For all ads under \$250, payment must be received by the classfied closing date. VISA, MASTERCARD, & AMERICAN EXPRESS accepted. Send to: Advanstar Marketing Services, 7500 Old Oak Blvd., Cleveland, OH 44130.

Send blind box replies to: Landscape Management, 131 W. First St., Duluth, MN 55802 (Include box number in address.)

FOR SALE



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Just as your customers look to you for lawn care advice, people come to us for insurance advice because they do not want to become insurance experts themselves. If you want good advice, the right coverage, and competitive rates, please contact:

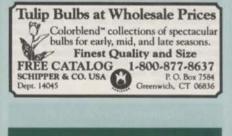
Richard P. Bersnak, President

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BOX NUMBER REPLIES: Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, 131 W. 1st St., Duluth, MN 55802-2065. Please include box number in address.

HELP WANTED

MAINTENANCE MANAGERS & SUPERVISORS:

One of the nation's largest and fastest growing full service landscape companies has an immediate need for experienced maintenance managers and superintendents, as well as entry level maintenance supervisors in the Midwest, Southwest, Mid-Atlantic, Northeast and Southeast states. The company seeks energetic, team oriented college graduates with proven leadership, communication and interpersonal skills. The company offers full-time positions, excellent advancement opportunities and exceptional compensation and benefits with an industry leader celebrating more than 50 years of uncompromising customer service. For immediate confidential consideration, please send or fax your resume to: The Brickman Group, Ltd., Corporate Office, 375 S. Flowers Mill Road, Langhorne, PA 19047, 215-757-9630, EOE 5/95

OPERATIONS MANAGER: Hermes Landscaping has an immediate opening for an individual to oversee the installation of landscaping and sprinkler systems on large commercial projects. Candidates should have supervisory experience and related background. Bachelors degree preferred. Sal. range 25k-35k + benefits. Hermes has been providing quality service for 30 years and we currently have a lot of contracts to fulfill. Come join our team. Send resume to: Hermes Landscaping, P.O. Box 14336, Lenexa, KS 66215. (913)888-2400 EOE. 5/95

BUSINESS FOR SALE

ALABAMA LANDSCAPE CONTRACTOR: Long established. Sales over \$500,000 P.A. Leader in this growing market. Good commercial maintenance contracts. Very well equipped. ABB-Associated Business Brokers 334-434-0030. 5/95

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LAWNCARE LANDSCAPE BUSINESS: Snow removal optional, Columbus, OH, Fast growing area, excellent growth potential, established 1988. Annual \$100,000 plus, asking \$60,000 to include all equipment and software. Will assist in transition first year. Serious inquiries only. (614)791-6700. 6/95

BUSINESS WANTED

Are you interested in selling your small to medium sized Lawn Care company? We can probably help!! We are currently searching for lawn spraying companies throughout the United States and Canada. If you wish to discuss this possibility further please contact: John Kloosterhuis, 476 Evans Avenue, Etobicoke, Ontario Canada M9W 217, Phone: (416)253-6540 or Fax: (416)253-6891. 5/95 GROUNDS MANAGEMENT SALES: Career position with established 88 year old quality building services company. NY, NJ, PA areas. Background in sales to corporate clientele. Strong motivation, proven sales experience. Must be articulate, organized, aggressive. Duties: prospecting, estimating, sales. Send resume. CONTROL SERVICES, 737 New Durham Rd, Edison, NJ 08817. Fax (908)548-4359. 5/95

Memphis based NYSE Traded Residential Property Company is actively seeking an experienced, career oriented, "hands on" professional to manage third party landscape services. Selected candidate should have minimum 5 years experience in direct landscape management and design. Primary duties and responsibilities will be: Oversee landscaping operations encompassing approximately 30 properties and expanding. Hiring, evaluation and management of third party landscaping services. Establishing expectations of landscaping companies. Oversee and evaluate work performed. Negotiation of service contracts. Individual should possess: 4 year Horticulture Degree. Experience in pricing and negotiation of landscape services. Professional presence. Position offers excellent salary, company benefits, incentive program and strong career opportunities. Qualified applicants forward resume with salary history to: Director of Landscape Planning, 6584 Poplar Avenue, Suite 340, Memphis, TN 38138. EOE/MF 5/95

EQUIPMENT FOR SALE

PIPE LOCATOR INEXPENSIVE! Locates, traces underground drain, water pipe lines of clay, PVC, ABS, steel, cement. Finds sprinklers, valves, clogs. Bloch and Company, Box 18058, Cleveland, Ohio 44118. (216)371-0979. TF

SPYDERS- New/Used/Rebuilt. Full line of replacement parts and update kits. Kubota, Ruggerini, and Kohler engines & parts. Nichols-Fairfield torque hubs. We repair and rebuild Spyder hydraulic pumps and motors. FAST SERVICE. Call or write: Mobile Lift Parts Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. (800)397-7509, FAX (815)455-7366. 12/95

REINCO HYDROGRASSERS and power mulchers in stock. Opdyke Inc., (Philadelphia Area) 215-721-4444, 5/95

BUCKET TRUCKS: Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers: New Morbark Disc and Drum Style. New Rayco Stump grinders. Best prices anywhere. Used Chippers: Asplundh, Morbark, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as-is or reconditioned. We also buy your surplus equipment. Opdyke's, Hatfield (Philadelphia Area). 215-721-4444. 5/95

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ATLANTIC PLANTSCAPES: We are currently seeking key people to work interior and/or exterior departments. We offer competitive salary, excellent benefits and unlimited opportunities in our. Richmond, VA; Hampton Road (Virginia Beach), VA; and Research Triangle (Rateigh), NC offices. Please call, fax or mail us a resume. Atlantic Plantscapes, 1400B Nowell Rd., Rateigh, NC 26707. Phone 919-233-2930. Fax 919-233-2941. 5/95

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.

FOR SALE

BUCKET TRUCK: Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 800-597-8283. 12/95

LEASE FINANCING

LEASE any type equipment for your business. Call AmeriNet Financial (216)543-3800. 5/95

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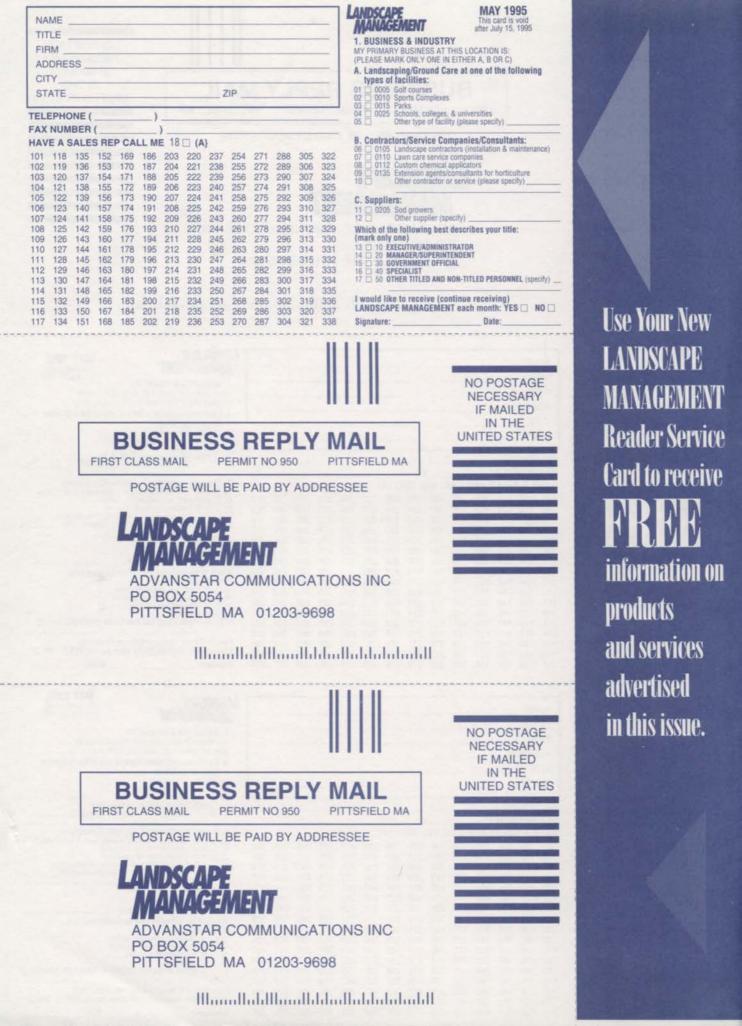
NOW...LEARN PROFESSIONAL LANDSCAPING AND GARDENING AT HOME! Accredited program provides throrough training in all phases of commercial and residential landscaping. Diploma awarded. Free brochure describes program and opportunities in detail. Call 1-800-326-9221 or write Lifetime Career Schools, Dept: LF0115, 101 Harrison Street, Archbald, PA 18403. 12/95

Mail Blind Box Replies to: LANDSCAPE MANAGEMENT Classified Ad Department, 131 W. First St., Duluth, MN 55802 Please include box number in address!

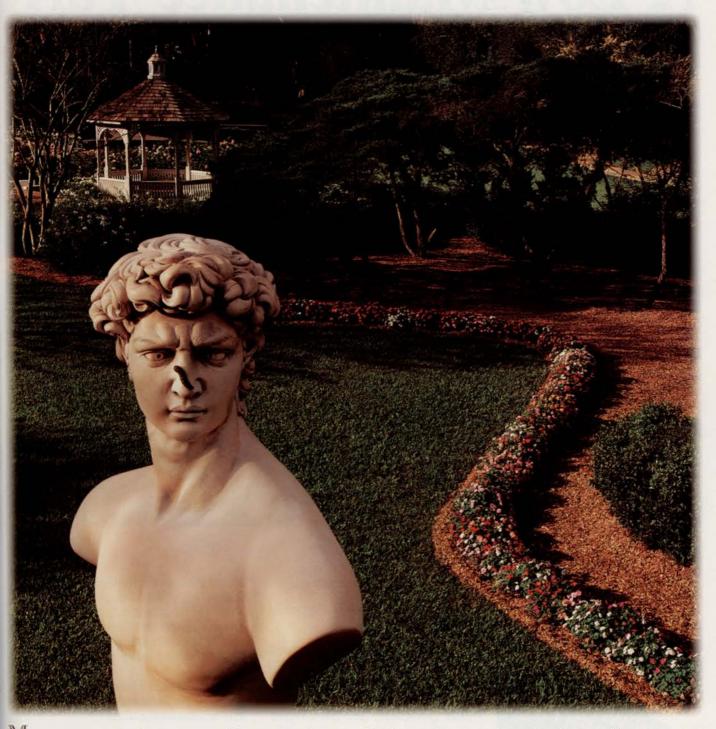
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DURSBAN ELIMINATES 140 INSECT PESTS BECAUSE ALL IT TAKES IS ONE TO BUG A CUSTOMER.



Most customers tend to overreact. Discover one lawn pest and they think they're infested. Never mind that most customers can't tell the difference between a sod webworm and a night crawler.

Keeping customers' lawns insect pest free is what Dursban* insecticide is all about. Not only is it a dependable and economical broad spectrum insecticide, but it has also been formulated to provide you an effective residual on most turfgrasses and ornamentals.

One thing for sure, use Dursban and customers won't be bugging you with their insect pest problems.

For further information on Dursban, or any other product in the extensive line of DowElanco products, give us a call at 1-800-352-6776. Always read and follow label directions.



DowElanco

Wherever You Need **A Low-Maintenance Turf Rely On**



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Koadsides, cemeteries, golf course roughs, vacation homes, orchards, reclamation areas. Wherever maintenance is impractical, Reliant Hard Fescue is the one you can rely on. It thrives on low maintenance:



- Good performance without supplemental irrigation
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