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American Sod Producers Association, 1855-A Hicks Rd., Rolling Meadows, IL 60008; (708) 705-9898.

Golf Course Superintendents Association of America, 1421 Research Park Dr., Lawrence, KS 66049-3859; (913) 841-2240.

International Society of Arboriculture, P.O. Box 908, Urbana, IL 61801; (217) 328-2032.

International Turfgrass Society, Crop & Soil Environmental Sciences, VPI-SU, Blacksburg, VA 24061-0403; (703) 231-9796.



National Arborist Association, The Meeting Place Mall, P.O. Box 1094, Amherst, NH 03031-1094; (603) 673-3311.

National Golf Foundation, 1150 South U.S. Highway One, Jupiter, FL 33477; (407) 744-6006.

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Professional Grounds Management Society, 120 Cockeyville Rd., Suite 104, Hunt Valley, MD 21031; (410) 584-9754.



Professional Lawn Care Association of America, 1000 Johnson Ferry Rd., NE, Suite C-135, Marietta, GA 30068-2112; (404) 977-5222.

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Sports Turf Managers Association, 401 N. Michigan Ave., Chicago, IL 60611-4267; (312) 644-6610.

Turf and Ornamental Communicators Association, 8400 Normandale Lake Blvd., Suite 500, Bloomington, MN 55437; (612) 832-5000.

AS WE SEE IT

JERRY ROCHE, EDITOR-IN-CHIEF



Golf continues as media's environmental whipping-boy

Last month, it was Paul Harvey; this month, it's the famed *Wall Street Journal*. Will it never end?

In case you didn't see the May 2nd issue of the WSJ, a large headline proclaimed "**Golf Courses Are Denounced as Health Hazards.**" The half-page article carried a cartoon of a golfer who was trying to putt while decked out in what appeared to be one of those "moon suits" like scientists from the Disease Control Center wore in the recent TV mini-series "The Stand."

The article, written by staff reporter Timothy Noah, was surprisingly well done. At least Noah bothered to get some comments from Jim Snow of the USGA Green Section and Rick Norton of the NGF. But the headline and cartoon were clearly exaggerations.

Just for the fun of it, being a professional writer and editor of sorts, I decided to re-arrange the article's structure and phrasing a bit. However, my headline rewrite says: "**Golf Courses Are Lauded as Environmentally Safe.**"

Here's how the beginning of my version of the article sounds. Remember, too, that I'm using essentially the same information that the original writer used elsewhere (much later) in his article:

Golf courses are a positive influence on the U.S. environment, say many proponents.

"Golf courses are increasingly showing that they can be very positive environmentally," says Rick Norton, vice president of operations for the National Golf Foundation. Standards of pesticide use and exposure, he says, have "evolved over the years as people have become more conscientious and more careful."

My version of the article, of course, carried with it a cartoon of birds merrily chirping away while they watched happy golfers on a putting green below.

Noah's article goes on to say that the

New York Department of Conservation has recorded 25 cases of bird deaths since 1971 that "it says" are related to golf course pesticides.

My version of the article goes on to say this:

Reports of alleged harm to wildlife and human health from particular golf courses, however, have been scattered. For instance, in the last 24 years, the New York Department of Conservation has recorded just 25 cases of bird deaths that, it contends, may have been related to golf course pesticides.

Besides the statements Noah made about the birds, there are many points of contention in the original article. These were addressed in letters to the editor which were written by the Golf Course Superintendents Association of America, Responsible Industry for a Sound Environment, and the Chemical Manufacturer's Association. By the time this column appears in print, you may have seen them in the *Journal*.

The point to my whole exercise, however, was to see exactly how far in one direction that cold hard facts and quotations could be skewed.

The journalism professors at Ohio University warned me years ago to avoid influencing reader opinion through sentence and story structure. I've long suspected that certain of the media have been preying on the public's eager curiosity, superficial though it is. But I never really saw proof that a headline writer or reporter could so drastically skew the tone of a story—until now.

Jerry Roche

LANDSCAPE MANAGEMENT

'WE KNOW YOUR TURF'

JUNE 1994 VOL. 33, NO. 6

COVER FEATURE

.. 8 Water use: get involved!

It will be incredibly expensive to harness new supplies of fresh water—particularly to fulfill demands created by turfgrass irrigation during droughts—because of newer federal regulations. And our demand for water will double in 20 years.

Ron Hall

FEATURES

12 LM Reports: Overseeders

Work can be done manually—and we provide you with some tips—but seeders and overseeders make the job more time-efficient. Here are some of the products on the market.

Ron Hall

14 Customer satisfaction

You must distinguish between residential and commercial customer service. Customer retention levels increase for companies that have implemented these few tips.

Ed & Todd Wandtke

16 'Firescaping' yards

Landscapers and homeowners often make unwise planting decisions. A seemingly simple choice of gardening strategy can quickly cook one's goose.

James E. Guyette



22 Staffing a family business

Failure to address work-related issues, like organization, is often overlooked when relatives are involved. Sometimes, you have to go 'outside the nest.'

James E. Guyette

26 When should you expand?

...When you have the resources, when you see potential, and when you're not needed in one place every day. Here are some other guidelines.

James E. Guyette

27 Safer pitchers mounds

The pitchers mound is the focal point of any baseball infield, but most don't get enough maintenance. Here's how to bring yours up to specifications.

Ron Hall

28 Selecting trees

If you are going to be in the market for trees which you'll have to purchase from a local nursery, here are some questions to ask and some pointers to remember, compliments of "Urban Forests" magazine.

TECH CENTER

30 Heat and water stress

If often faced with maintaining acceptable turf with limited water, you can use grasses that need only naturally available water or reduced irrigation.

32 Athletic field soil: the injury factor

Consider athletic field soil conditions as the best possible growth situation for the turf, and the basis for player safety. Soil conditions must be suitable from both chemical and physical standpoints.

Henry Indyk, Ph.D.

GOLF 'SCAPING

36 Flowers add color clout

The best arrangements add excitement and reflect the mood and colors in the surrounding landscape.

Steve & Suz Trusty

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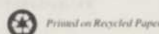
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Terry McIver

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Terry McIver

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On the cover: The Troon North Golf and Country Club, Scottsdale, Ariz. Superintendent: Jeff Spangler. Photo by Larry Kassell.

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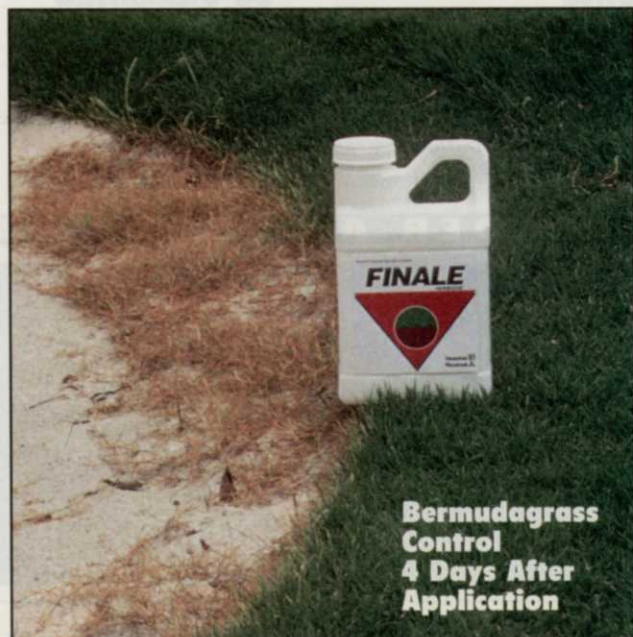
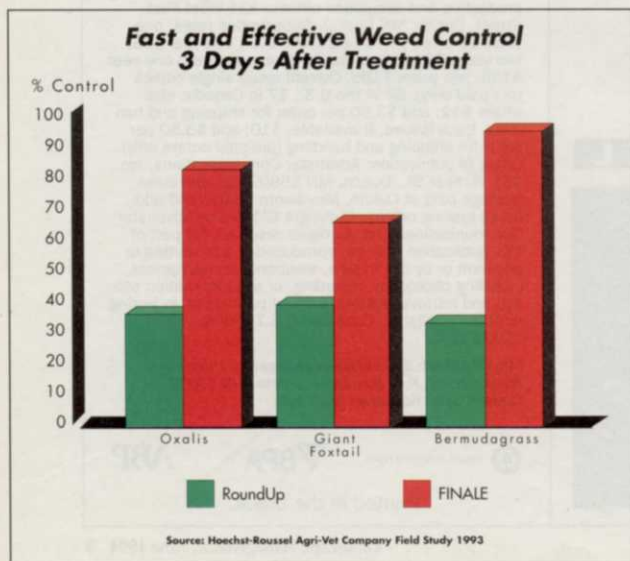
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ASK THE EXPERT

DR. BALAKRISHNA RAO



Best time to collect maple syrup

Problem: When is the best time to collect maple syrup? What are the conditions which maximize sap flow? (Massachusetts)

Solution: Dr. Roger Funk, vice president of human and technical resources for The Davey Tree Expert Co., offers the following:

In Massachusetts, the sap flow occurs from October to April, if freezing nights are followed by warm days. It ceases if temperatures are consistently above or below freezing, and it starts on the south side of the tree. Most sap flows occur between 9 a.m. and 12 noon.

Maple sap contains sucrose, small amounts of glucose, inorganic salts, nitrogenous compounds such as peptides and amino acids, amylases, and unidentified organic constituents. Sugar comes from starch, which is converted by enzymes and then secreted into xylem.

The flow seems to be caused by stem pressure. This is produced by rising temperatures followed by low—but not necessarily freezing—temperatures. Another possible explanation is that carbon dioxide accumulates in intercellular spaces during the day. This would cause pressure that forces sap out of wounds at night, when carbon dioxide is absorbed.

Reducing the pressure would cause water to move upward from the roots which would then refill the xylem vessels.

Product review: Pendulum herbicide

Problem: We are a small landscaping company. One of our employees mentioned that a product called Pendulum can be used for weed control in landscapes. Can it be applied over the landscape plants? (Michigan)

Solution: Pendulum is a pre-emergence herbicide from American Cyanamid Co. It is available as Pendulum WDG (water dispersible granular) formulation. Its active ingredient is called pendimethalin.

Pendulum herbicide is labeled for use on top of and around many established ornamental plants. It is labeled for a number of trees, shrubs, flowers, budding plants and groundcovers, and is active against many grasses and several broadleaf weeds. It prevents weeds from emerging as they germinate.

Pendulum is also labeled for use in non-crop areas, such as utility right-of-ways.

Read and follow label specifications for additional information and better results.

Sand, nutrients will improve athletic turf

Problem: Will fertilizer or lime improve the turf on a football practice field? How about adding round sand before coring to help increase the rooting zone? (New York)

Solution: Based on soil test results and as needed, fertilizer and lime can be used when trying to improve turf on football practice fields.

Adding sand before coring would not be as beneficial as adding

it after coring. By adding sand after coring, there is a greater chance for the sand particles to fall into the aerification holes.

Reports suggest that adding medium to coarse sand (0.25 to 1.2 mm in diameter) is useful when trying to reduce compaction and increase root depth.

Continued use of sand could lead to layering or the development of a soil interface.

Guidelines for firmly-rooted sod

Problem: Last year we repaired a number of lawns which were severely damaged by insects or diseases. We used sod as a means for fast recovery. The problem is that it is not rooting very well. What can be done, and how can we avoid the problem in the future? (Michigan)

Solution: Poor rooting of newly-sodded turfgrass may be due to several factors, such as lack of sufficient moisture, soil interface or improper soil preparation at planting.

After installing the sod, you must provide sufficient moisture during establishment. The edges of sod pieces, if not sealed properly, can lose excessive moisture during high temperatures.

In addition, most sod is grown on muck soils, and when placed on clay-type soil without good soil preparation, interface problems can develop. The difference in soil types results in incompatibility, causing poor penetration and surface runoff whenever watered. This affects proper rooting.

Prior to sod installation, the soil should be tilled and prepared. At this time, it is easy to incorporate phosphorus, a needed element for root development.

Similarly, any pH correction should be done at this time.

In the future, make sure the soil is prepared properly for root penetration, and sufficient moisture is provided during the establishment period. The areas showing poor rooting can be helped by core aerifying in fall or early spring. If possible, aerify annually for faster results.

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

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

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GREEN INDUSTRY MUST GET INVOLVED

QUICK - READ:

- ▶ It will be **incredibly expensive** to harness new supplies of fresh water—particularly to fulfill demands created by turfgrass irrigation during droughts—because of newer federal regulations. And our demand for water will double in 20 years.
- ▶ **Xeriscapers** single out the industry as 'the bad guy,' using way too much irrigation water for way too much turfgrass.
- ▶ Dr. James Beard says that xeriscapers have spread **inaccurate and misleading information** about landscapes and lawns, and about the amounts of water they need and use.
- ▶ **Water-wise councils** are separate from water utilities although utilities are represented on them. The green industry carries equal weight.
- ▶ Says Dr. Beard: What's wrong with **tan or brown turf** during droughts if one chooses not to irrigate or the water is not available?

■ Somewhere in the United States it hasn't rained. The calloused hands of a water utility worker tighten the valves on the green industry's access to public water.

Whether you're a grower, landscape contractor, golf course superintendent or lawn care company owner, your access to public water (more likely that of your customers) could be restricted. The utility could turn off the spigot.

That's why it's vital that you understand how your services fit into the local water supply picture, and that you participate in community water-use decisions. And it must be done before a drought and its resulting water restrictions.



Advocates of xeriscaping have been accused of singling out the green industry as 'the bad guy,' the water waster.

Begin by learning two terms: "Xeriscape" (a trademarked term) and "water-wise." They crop up in discussions surrounding the politics of water.

Xeriscape has been around since 1981, starting in the arid Southwest. It's now recognized nationally, even in Florida where it's law for all water utilities. Texas, too, passed Xeriscape legislation with, sources say, little input from the green industry. The U.S. EPA in 1993, in fact, published a brochure describing and advocating it.

Xeriscape focuses almost exclusively on water-conserving landscapes. This makes some in the green industry uneasy. They say it singles out the green industry as "the bad guy," the water waster. Specifically, they say it puts too much blame on turfgrass.

"The idea of (water) conservation landscaping wasn't new by any means," says Ken Ball, conservation specialist with Denver Water. "What was new was calling it by some catchy, creative name and putting together a systematic approach to getting people involved in the process.

"There seems to be more resistance to the word from some professionals than from the lay person. Actually, it doesn't matter what you call it. Xeriscape represents sound horticultural principles."

Some people in the turfgrass industry instead called it "zeroscape," implying that it advocated zero irrigation of landscapes. Supporters insist it doesn't. Nor did it ever. Even so, to some turfgrass managers it still means cacti, scrub and rocks—landscapes with little or no turfgrass.

The wrong info—Some turfgrass experts still see it as a threat.

Dr. James Beard, an influential turfgrass expert, maintains that Xeriscape supporters have spread inaccurate and misleading information about landscapes and lawns, and about the amounts of water they need and use. This, he has claimed at several turfgrass conferences, leads to unwise and unfair regulations limiting the amount of grassed property owners can have. Or it leads to rulings restricting turfgrass irrigation.

"Statements have been made, such as all turfgrasses are higher water users than trees and shrubs," Beard said at the 1993 International Turfgrass Conference in Palm Beach, Fla. "There is no scientific data available to support this statement. The few comparative water use studies that are available indicate that trees and shrubs are higher water users than turfgrasses."

Xeriscape proponents confuse the public further, claimed Beard, by providing lists of

IN WATER-USE DECISIONS

plants that may be drought resistant but aren't necessarily low water users. Mechanisms for controlling a plant's water-use rate and drought resistance are entirely different, he stressed.

"I'm not against trees. I'm just saying, if you're going to be legislating the use of plant materials, let's base it on sound scientific fact," said Beard.

Xeriscape supporters, indeed, have redefined their views on turfgrass, now allowing that it has a place in water-conserving landscapes. Even so, they believe that way too much turfgrass is receiving way too much irrigation water, specifically potable water.

Dollars and sense—Both sides argue about the total amount of water used in turfgrass irrigation. But just about everyone concedes that it's usually drawn from a utility when demand for water generally is greatest—when it's hot and dry.

This creates unacceptable expense, explains Fox McCarthy, who was hired by Cobb County-Marietta (Ga.) Water Authority in 1989 to help the green industry develop water-conserving practices.

During the 1988 drought in Atlanta, for instance, McCarthy's utility was fined \$75,000 for exceeding its permit limits during peak water use. Much of this peak use resulted from turfgrass watering, which worries water utility officials. They maintain that harnessing new supplies of fresh water, particularly to fulfill demands created by turfgrass irrigation during droughts, will be incredibly expensive as a result of newer federal regulations.

"If we can cut off those peaks, that would

give us up to 15 percent of our demand in the future," says McCarthy. "Demographic studies tell us our demand for water is going to double in 20 years."

Part of the answer is evident, says McCarthy: conservation.

A larger effort—Enter the concept of "water-wise" that seems to be more acceptable to segments of the green industry than Xeriscape. That's because water-wise encompasses almost every aspect of water conservation, the inside of homes and businesses as well as lawns/landscapes. Xeriscape is often just one part of this larger conservation effort.

The Georgia Water Wise Council was started in 1989, a year after the drought hammered Atlanta's green industry, causing millions of dollars in losses because of irrigation restrictions.

"The green industry really took a hit here in Atlanta," recalls McCarthy, who saw that the water utilities and the green industry didn't trust each other. Over a period of months that changed though, he explains—particularly after the formation of Georgia Water Wise Council and subsequent face-to-face meetings between utilities and industry.

Councils like this are separate from water utilities, although utilities and the green industry carry equal weight on them. In fact, representatives from utilities and the green industry alternate as presidents of the council.

"The utilities and the green industry professionals are getting to know each other, and that's why it's working," claims McCarthy. The Georgia Water Wise Council spawned a similar council in Florida this past year.

Another in Texas is being considered.

Changing perceptions—Although utilities and the green industry (usually turfgrass) strongly disagree on the appropriateness of turfgrass irrigation, both realize the greater problem lies with water misuse.

"This is really a people issue," says Dr. Doug Welsh, a cooperative extension agent in Texas and a longtime Xeriscape proponent. "What we have to do is change people's attitudes about water. We did it 20 years ago with 'Don't Be a Litterbug,' and now people don't throw trash on the highways."

Welsh believes that the industry should educate customers to accept periods when their turfgrass is brown and dormant. "You can have a nice lawn in most of the East and never have to irrigate," he says, "if you can perhaps put up with a couple weeks of brown."

Beard, in fact, has made similar statements. "What's wrong with tan or brown turf during droughts if one chooses not to irrigate or the water is not available, rather than the alternative of getting rid of the turf and planting trees?" he said at the Ohio Turfgrass Conference in 1992.

Proponents and skeptics of Xeriscape, indeed, agree that turfgrass itself isn't necessarily a water waster, but people sometimes are.

"When an area gets plenty of rain, it's not the turf's fault that people are watering. It's people's fault," claims Welsh.

"Basically, in most situations it's man who's wasting the water through improper irrigation practices and landscape design," said Beard at Ohio Turf.

"The publicity and legislation devoted to water conservation through reductions in turfed areas is extraordinarily out of proportion to the much more significant water waste in metropolitan water districts," he added.

And, in spite of fundamental differences of purpose, both heartily agree that the green industry—specifically turfgrass—*must* become involved in local water-use decision making.

—Ron Hall

THE SEVEN XERISCAPE GUIDELINES

■ Bruce Adams is the water conservation coordi-

nator for south Florida. This might seem ridiculous. Few areas in the U.S. receive more than south Florida's average of 55 inches of rain annually. Few are as lush and green. After all, much of the Everglades is in the South Florida Water Management District (SFWMD).

Adams, though, insists that the seven principles of Xeriscape

fit as well in arid Southwest.

"Sure, we have 50-plus inches of rain, but we also have about 45 inches of evapotranspiration each year too," says Adams. Most of the rain falls in the summer, not in the winter when tourists

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return and water demand balloons. Also, some of the precipitation arrives in 3- to 50-inch cloudbursts. The rain soaks well below Florida's sandy soils, or cascades off roofs and pavement to be collected in ditches and whisked to the ocean via canals.

The SFWMD, in fact, attempts an incredible balancing act. Using sophisticated weather-monitoring equipment, SFWMD specialists electronically manipulate a spiderweb matrix of canals and gates to move excess rain from communities. Yet it must also maintain groundwater levels to keep the Atlantic Ocean's salt water from invading aquifers.

This is vital because 98 percent of south Florida's fresh water supply comes from groundwater.

In truth, south Florida cannot capture and retain its abundant rain so that when the area receives less 10 or 12 inches below its normal annual amount—as it did in 1989 and 1990—shortages develop. This leads to irrigation restrictions for landscapes and turfgrass.

But, maintains Adams, not all lawns or landscapes suffer similarly because of the restrictions.

"Any person who practices Xeriscape landscaping and has an efficient irrigation system, and has segregated their plants by water needs, and maintained them properly—these people laugh at the restrictions," he says. "They're barely bothered."

Taking the lead from the SFWMD, other water districts in Florida have begun promoting Xeriscape through the Florida Water Wise Program.

Adams, past president of the now-defunct Xeriscape Council and an instructor at Florida Atlantic University on water-conserv-

ing landscapes and the opportunities they provide the green

- 1) Plan your landscape.** Understand the nature of the land and its water demands.
- 2) Improve the soil.** Build up sandy soil with compost and maintain it by periodically returning organic matter.
- 3) Irrigate efficiently.** Irrigate turf areas separately from other plantings. Group plantings according to similar water needs.
- 4) Use turf wisely.** Locate turf only in areas where it provides functional benefits.
- 5) Use drought-tolerant plants.** Considering exposure to the sun, choose the right plant for the right place in your yard.
- 6) Use mulches.** Mulches limit weed growth and retain moisture.
- 7) Maintain your landscape properly.** Proper mowing, pruning and weeding, limited fertilization, pest control and irrigation system use save water.

—R.H.



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