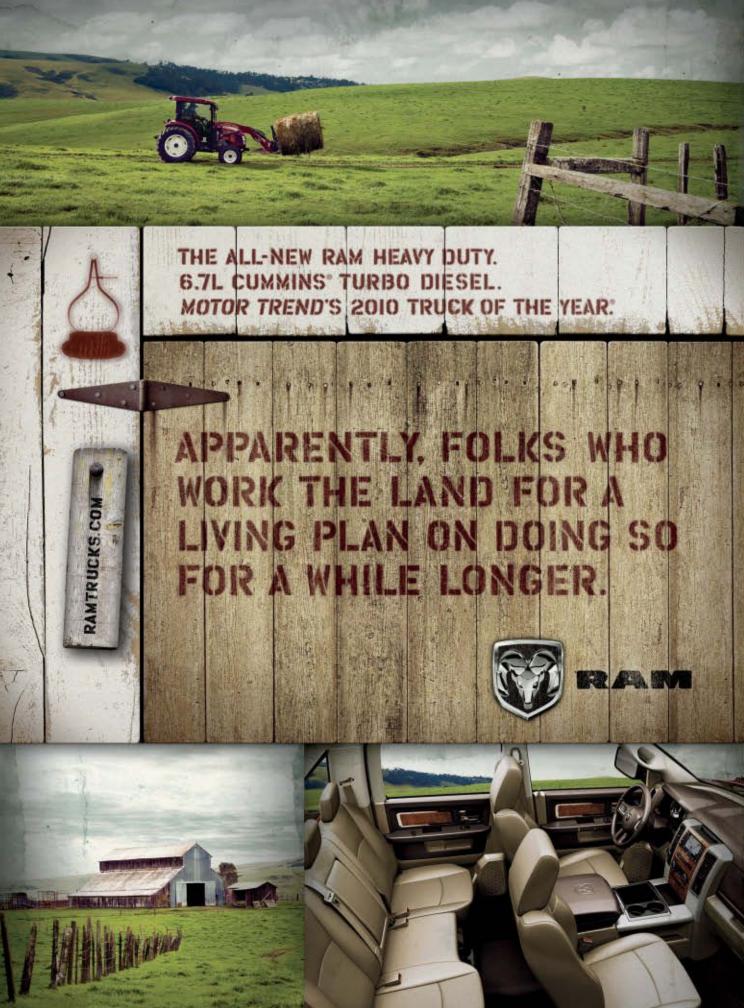
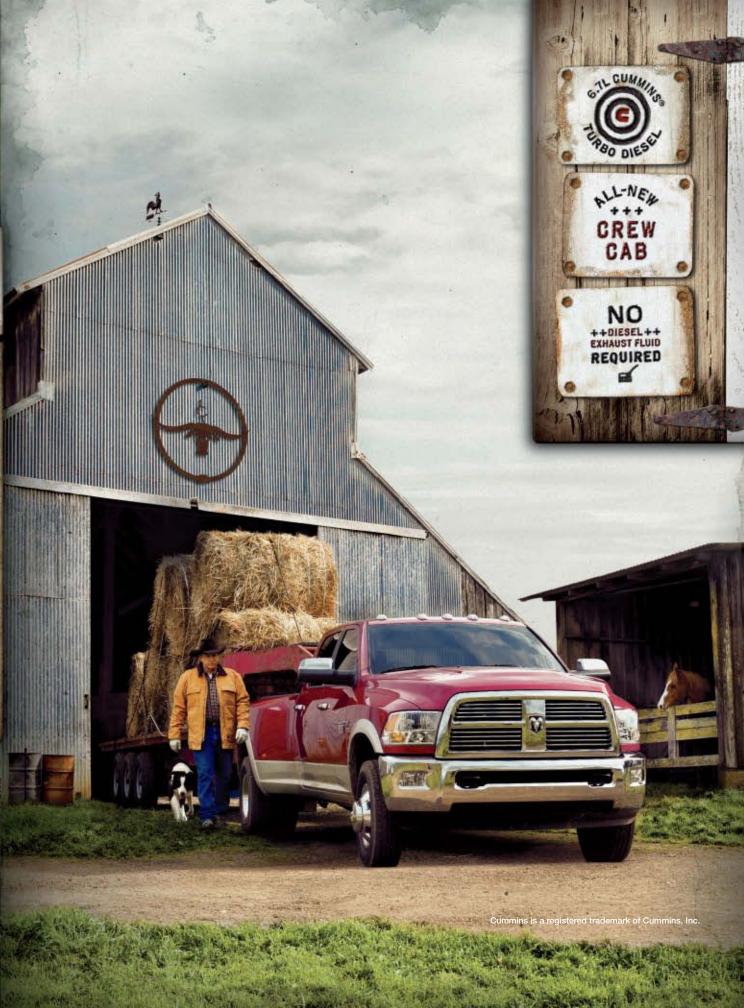
Landscale The preferred resource for large contractors

WATER

The era of easy oil and plentiful water is ending. Better managing these two resources could be your next great business opportunity.





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Oil & water BOB O LO M

The era of easy oil and plentiful water is ending. Better managing these two resources could be your next great business opportunity.

BY NICOLE WISNIEWSKI

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Proper planning can reduce the amount of wasted irrigation water and increase profits.

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It's a part of our everyday lives. Whether because of the economy, our jobs, our families, our health or even simply our schedules, we all have some kind of stress.

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The 2010 FIFA World Cup begins in South Africa and the action at this year's spectacle will unfold on grass - mostly.

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FIRSTCUT

NICOLE WISNIEWSKI EDITOR-IN-CHIEF

Contact Nicole at 216/706-3735 or via email nwisniewski@guestex.com.

2010: A Turf Odyssey

fter talking to so many industry experts on the oil and water conundrum and its affects on the landscape industry, particularly how conserving these two resources is leading some groups to point to turf and plants as the problem, I started having nightmares.

I pictured vast hillsides of turf and trees — lush and vibrant green — reduced to dusty, barren mounds. No turf for cooling and erosion control. No trees for shade. No plants creating texture, depth and color. Brown for miles. Heat radiating off of concrete. Dry air. Labored breathing; oxygen seeming scarce.

Our industry — extinct.

And then I woke up.

First of all, for full disclosure, I should mention that my husband watches a lot of science fiction. So, yes, this dream could have been conjured up from thoughts of *Dune* in my subconscious. But I still couldn't help but wonder: In a time where plants and turf are constantly being attacked as supposed water and energy hogs, is there a possible future in this picture?

And I'm not the only one having nightmares.

PLANET president Bill Hildebolt recently highlighted a similar realization in his March 2010 *PLANET News* letter. He detailed travels to China where at one point under Mao Zedong's leadership, the country rid itself of turf and other landscaping the Marxists considered capitalist trappings. The countryside was a moonscape — nothing was green. The air, he said, was so full of dust and dirt with rampant pollution he could actually taste it.

Then, as Georgia was suffering a severe drought in 2008, contractor Jim McCutcheon remembers going to a meeting to discuss landscape water use limitations. One contractor drove to the meeting in his landscape truck. But fearing the end of his business as a result of sever water restrictions, plastered over his company logo he put a sign that read "EXTINCT."

But, "don't panic," McCutcheon says. The industry's problem — and the reason myself and others are letting science fiction get the better of us: We've lost confidence. We're constantly under attack, and this economy has taken the fight out of us as we focus on keeping our businesses on track.

To regain focus, Hildebolt says the biggest defense is a solid offense. Collect the positive facts about landscaping and, armed with that, your reputation and photos of the work you've done (as well as a list of references from happy clients), stand proud and confident that in your work you make the world a better place — one landscape at a time.

As Bert Swanson of Swanson's Nursery Consulting says in the June 2010 issue of MNLA's *The Scoop*: "Plants are not ornaments; plants are a necessity." He says contractors should continue to tout plants as "environmental, energy saving, soil stabilizing, phytoremediation and, yes, even sustainable."

So, in sci-fi words everyone can understand: "May the force be with you."

Landscape Management

CLEVELAND HEADQUARTERS
600 SUPERIOR AVE. EAST SUITE 1100
CLEVELAND OH 44114 800/669-1668

EDITORIAL STAFF

Editorial Director Marty Whitford 216/706-3766 | mwhitford@questex.com

Editor-in-Chief Nicole Wisniewski 216/706-3735 nwisniewski@questex.com

Editor-at-Large Ron Hall 216/706-3739 | rhall@questex.com

Managing Editor Daniel G. Jacobs 216/706-3754 | diacobs@questex.com

Technical Editor Pete Grasso 216/706-3775

pgrasso@questex.com

Executive Editor Larry Aylward 216/706-3737 | laylward@questex.com

Contributing Editor Heather Gooch 330/723-3539 hqooch@questex.com

Art Director Carrie Parkhill 216/706-3780 | cparkhill@questex.com

ADVERTISING STAFF

Publisher Patrick Roberts

 $216/706\text{-}3736\ \ Fax: 216/706\text{-}3712\ \ |\ \ proberts@questex.com$

Northern National Sales Manager Dave Huisman 732/493-4951 Fax: 732/493-4951 | dhuisman@questex.com

Southern National Sales Manager Jason DeSarle 216/706-3758 Fax: 216/706-3712 | jdesarle@questex.com

Business Development Manager Ric Abernethy

216/706-3723 Fax: 216/706-3712 | rabernethy@questex.com Account Executive Classifieds Kelli Velasquez

216/706-3767 Fax: 216/706-3712 | kvelasquez@questex.com

BUSINESS STAFF

Vice President Kevin Stoltman 216/706-3740 | kstoltman@guestex.com

Administrative Coordinator Petra Turko 216/706-3768 pturko@questex.com

Production Manager Amber Terch 218/279-8835 aterch@questex.com

Production Director Jamie Kleist 218/279-8855 | jkleist@questex.com

Audience Development Manager Carol Hatcher 216/706-3785 | chatcher@questex.com

MARKETING/MAGAZINE SERVICES

Reprints landscapemanagement@theygsgroup.com | 800/290-5460 x100

Ilene Schwartz Circulation List Rental 216/371-1667

Customer Services Subscriber/Customer Service landscapemanagement@halldata.com | 866/344-1315; 847/763-9594 if outside the U.S.

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THEHALLMARK

RON HALL EDITOR-AT-LARGE Ron has been in the Green Industry for 26 years. Contact him via e-mail at rhall@questex.com.

Keep SITES in your sight

he Sustainable Sites Initiative's (SITES) two-year pilot program runs from June 2010 to June 2012. Feedback from the more than 150 participating projects will be used to revise the SITES final rating system.

At this stage of its development, it's difficult to gauge the impact of SITES on the professional landscape/lawn service industry. It's likely there will be little effect, at least until the release of the final rating system in 2013. But once the rating system is in place, things could change — significantly.

SITES, simply explained, is attempting to do for outdoor urban environments what the Leadership in Energy and Environmental Design (LEED) building rating system is doing with the building trades. Even if you have just a passing knowledge of LEED, you know that it has had a profound "greening" effect on construction. By the end of 2009, commercial ventures included more than 12,200 projects either registered or certified. The commercial category is the largest LEED category, followed distantly by retail projects (4,398). The number of registrants or certifications for the LEED Home program is much smaller and wasn't immediately available on its website. All in all, however, LEED is rapidly transforming the construc-

The goal of SITES is just as ambitious. It envisions sustainability and the very notion of landscapes in a much broader context than what most of us in the professional landscape/lawn service industry associate with the properties we design, install and maintain. In its view of landscapes, SITES includes parkland, transportation corridors, industrial sites, educational sites and government complexes — along with, of course, the commercial and residential properties that occupy our efforts.

A summary of the projects participating in the pilot program provides a reference for the scale of its goal. Pilot project types by percentage: > 25% Open Space/Park;

- > 20% Institutional/Educational:
- > 15% Commercial:
- > 13% Residential;
- > 9% Transportation Corridor/Streetscape;
- > 8% Open Space/Garden/Arboretum;
- > 6% Government Complex;
- > 3% Mixed Use;
- > 1% Industrial

There are SITES projects in 34 U.S. States and several in Canada, Iceland and Spain. Approximately 25% of the projects involve properties of less than 1 acre, 26% are 1 to 5 acres, 40% are 6 to 100 acres, 8% are 101 to 500 acres and 1% are greater than 500 acres.

If you scan the descriptions of the more than 150 pilot projects, the names of familiar landscape companies appear. For example, The Brickman Group's Chicago-area project involves improving rainwater runoff quality, reducing potable water use, improving soil health and instituting sustainable management practices at the Hoffman Estates Marriott Hotel property. This is one of two SITES pilot projects partnering Brickman with Marriott. The second involves Brickman making similar landscape improvements to Marriott headquarters in Bethesda, MD.

In Portland, OR, the DeSantis Landscapes' Ash Creek House residential project converted a 7,500sq.-ft. weed field adjacent to a small stream into a low-maintenance garden with native and adaptive plants. The project involves improving the quality and water-holding capacity of the soil at the residential greyfield, and collecting stormwater from the residence's roof for sub-soil distribution to the field.

Lupfer Landscaping in the Chicago area, Piedmont Landscape Contractors in Atlanta, and L.I.D. Landscapes and Nielsen Designs, LLC, Boulder, CO, are just a few of the other landscape professionals adding their names and efforts to SITES pilot projects. Their involvement suggests that they recognize the potential for SITES to become a transformative agent in our industry.



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COVER STORY BY NICOLE WISNIEWSKI EDITOR-IN-CHIEF LANDSCAPEMANAGEMENT.NET

tion Agency (EPA). Compare this to the \$707 that family pays for soft drinks. Or the \$2,000 they spend per vehicle on fuel, Gomestic's study says.

Ask the average landscaper what he spends on fuel, and one can get a pretty accurate picture of not only dollars and cents, but how he's trying to trim those costs. But ask him how much water his average client's landscape needs, and you may not get such a straight answer. "The industry as a whole has a very low threshold for understanding water use in the landscape," says Larry Cammarata, green management consultant for Brickman, a \$687 million national landscape company with headquarters in Gaithersburg, MD.

Based a large part on cost, "there is an overwhelming economic burden placed on gasoline."

The era of easy oil and plentiful water is ending. Better managing these two resources could be your next great business opportunity.

The other is talked about less frequently and then in sweeping generalities. It's assumed. Its pricing and proper use are inconsistent. A hodgepodge of policy surrounds it. It's taken advantage of, misused and abused. Yet many argue it is *more* important to the industry's future than the former.

Oil and water.

ALL ILLUSTRATIONS/PHOTOS BY: ISTOCK INTERNATIOANL

And the big contrast happening between the two resources is currently making Smith chuckle.

"If I forget to shut off my Chevy Tahoe and let my car idle, draining my 30-gallon gas tank, I lose \$85," he says. "It hits my wallet immediately. But, at home, I pump water out of the ground — so what's the penalty if I waste water?"

Essentially, nothing happens. "We don't even think about it when we get the water bill because water is still relatively inexpensive," he says. "The framework doesn't exist for someone to be rewarded to be an efficient water user." The Congressional Budget Office says combined water and sewer bills average half of 1% of U.S. household income, and this is expected to remain less than 1% through 2019. That's \$523 annually per household, says the U.S. Environmental Protec-

Smith says. He isn't joking. The past eight U.S. presidents have touted their ideas for a more energy independent future.

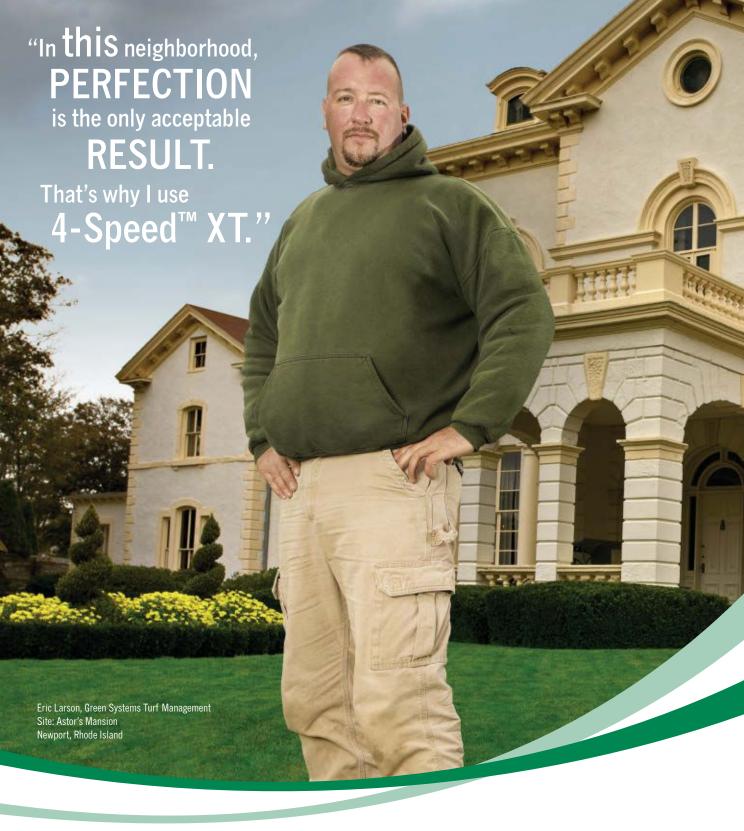
"We fret about the running out of oil, but water lubricates the economy just as oil does," agrees Robert Glennon, author of 2009's *Unquenchable: America's Water Crisis and What To Do About It.*

And, to complicate the issue, both resources are interconnected. Energy is used to treat, distribute and use water and many alternative fuel sources require water for their development.

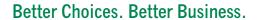
When asked to prioritize water and fuel use for the average landscaper, Jennifer Smith, owner of Oakland, CA's The Greensmith, says "water is definitely the bigger issue, but not as many people are as focused on it as they should be. We perceive we can control it whereas our dependency on oil is so guttural — we load up on tools, get in our truck and go. The deeper problem is water, but it's not talked about consistently every day."

"Maybe if when you pulled up to a customer's site like when you pull up to a gas pump, the water meter would start running to show the gallons you were using," adds Jim McCutcheon,

continued on page 13



With contracts for many of the world's most famous mansions, Eric Larson faces customer expectations that are as high as the real estate prices. So when ground ivy, clover and other tough weeds started showing up, he turned to 4-Speed XT. Its combination of four active ingredients makes weeds 'Deader. Faster.' For more on 4-Speed herbicide brands, and more of Eric Larson's story, go to www.nufarm.com/us.





COVER STORY

continued from page 11 president of Austell, Ga.-based, \$10.1 million HighGrove Partners. "But this doesn't happen. Water use is invisible."

Both issues are heavily affecting the future of green as today's landscapers know it. As water restrictions increase and outdoor power equipment is cursed by activists as carbon-emitting monsters, turf becomes the victim — a supposed water and energy hog that requires mass care and inputs. The EPA estimates landscape irrigation accounts for one-third of all residential water use. totaling more than 7 billion gallons per day. And 50% of that water is wasted due to evaporation, wind or runoff caused by overwatering.

But industry experts, including Andy Smith, say these rash decisions are being made without the help of science or basic horticultural fundamentals. "It's not the *use* of water that is the problem — it's the misuse," he explains. "But we're being told we have to change the water target — turf — to decrease water use instead of attacking the waste."

The era of easy oil and plentiful water is ending. And better managing these resources could be a landscaper's next great business opportunity. As Kris Kiser, executive vice president, Outdoor

"MAYBE IF WHEN YOU PULLED UP TO A CUSTOMER'S SITE LIKE WHEN YOU PULL UP TO A GAS PUMP. THE WATER METER **WOULD START RUNNING TO SHOW THE GALLONS** YOU WERE USING. BUT THIS DOESN'T HAPPEN. WATER USE IS **INVISIBLE.**" — JIM MCCUTCHEON, HIGHGROVE PARTNERS

Power Equipment Institute, says: "If we don't step up and do something, someone else will do it for us - and they won't help us limit things like water; they will limit the things that use it, starting with the lawn."

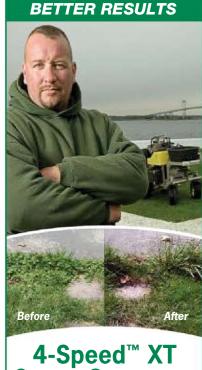
Stalled & flooded

The issue of gas prices can be volatile. First, it starts with a look of stunned disbelief as the numbers climb on the pump while a landscaper fills his tank. Price fluctuations happen regularly because oil prices are easily influenced by things like the weather. Secondary effects come later — maybe a landscaper decides not to take a job too far out of his normal service area because the costs outweigh the profit or he buys fewer trucks because his equipment budget is tapped or he buys less equipment because product prices have increased due to rising shipping costs. As long as trucks and equipment run on gasoline, and its price affects other buying decisions, fuel costs will continue to influence every part of the U.S. economy, Gomestic says.

What happens when oil runs out? Experts in the field say it won't, but it will become too costly to obtain, forcing people to rely on other energy sources.

Enter the flood of alternative fuel equipment and vehicles into the market. Though some alternative fuels are entering the scene partnered with products that can handle them, others aren't.

By August, for instance, Kiser says the EPA will most likely approve E15 — gasoline with 15% ethanol. But the testing of mid-level ethanol blends on outdoor power equipment engines has shown performance irregularities and failure, including fuel tank corrosion and leaks and unintentional clutch engagement — huge safety hazards. Manufacturers would like to build new machines capable of handling higher ethanol blends, but this does not address what to do with legacy products or further increasing ethanol blends. EPA's solution is fuel pump labeling to ensure people use the proper gasoline. But since fuel purchasing is driven by price, Kiser expects landscape crews will unin-



Saves Contracts

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1.3 oz/1,000 sf of 4-Speed XT plus spreader-sticker (1 oz/gallon finished spray) **APPLICATION EQUIPMENT:**

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"This was not ideal herbicide application timing for ground ivy control, but we still had great results on it and all the other weeds on the 4-Speed XT label. As a result, we saved several contracts. We'll be using a lot more 4-Speed XT and other Nufarm products in the future."



COVER STORY

tentionally end up filling their equipment with E15.

OPEI isn't the only group to be wary of what's viewed as the EPA's swift decision-making. The California Air Resources Board is another. They say the EPA should first complete the adequate testing that will take years and cost millions.

On the other hand, water is out of sight, out of mind, Andy Smith says. Georgia has a good example. The state suffered a level IV drought, and in September 2007 implemented severe water restrictions. Some landscapers' businesses suffered considerably as a result of the historic drought combined with high fuel prices and the recession. In 2009, after above average rainfall that continued into this year, the issue eased some. So some contractors became complacent.

But Bill Hildebolt, president of Nature's Select Premium Turf Services, Winston Salem, N.C., and current president of the Professional Landcare Network, says as early at this August, the picture could change dramatically. "We are at a tipping point," he says. "Sure, maybe the larger crisis has eased up, but the underlying problem is still there. All it will take is a jump in fuel prices and a few weeks with no rain and it could impede these companies considerably."

McCutcheon agrees. He saw the writing on the wall after the water restrictions went into place — one week from installing seasonal color on most of his clients' properties. He



WATER WARS

One body of water.

Three states drooling to tap in.

Welcome to the tri-state water wars – an all-out fist fight between Georgia, Florida and Alabama over water.



For almost two decades, Georgia, Alabama and Florida have been battling over the future allocation of water in two major river basins that cross their borders. Georgia wants to have enough water to allow metro Atlanta to continue growing, while Alabama and Florida – the downstream users – want enough water flowing for their own economic well-being. The dispute involves several federal agencies, courts and mediators, and its outcome is one of the most important environmental issues in the region today.

A big factor in the problem is population. For instance, Jim McCutcheon, president of Austell, GA-based High-Grove Partners, says he remembers passing a sign as he drove into the city of Atlanta when he moved there in 1978 or 1979 touting a population of less than 1 million. Today, that city boasts 5.5 million people.

According to the World Water Council, the 20th century saw a tripling of the world's population while freshwater use grew by a factor of six. World population is expected to increase as much as 50% over the next half century, and the U.S. alone will expand by 100 million over the next 40 years to 422 to 458 million people, according to the U.S. Census Bureau. As a result, analysts are worried increasing demand for water coupled with industrialization and urbanization, could have serious health and environmental consequences. And access to water also will likely cause conflicts between governments as well as within national borders.

When McCutcheon was knee deep in severe drought and water restrictions in 2008, his industry peers, joking around at the Green Industry Expo, handed him bottles of water saying, "Take that back with you to Georgia."

McCutcheon enjoyed the joke, but today he wonders if they know how serious the problem can become nationwide. "There are 44 situations around the country that are just like Georgia-Florida-Alabama where reservoirs were built to generate power, control flooding and for more navigatable water down waterways, and cities are using them for drinking water," he says. "Those cities don't have the legal rights to use the water just like Atlanta has no claim to the water in Lake Lanier. Unless Georgia, Florida and Alabama can come to a resolution, Congress will step in to figure it out. And all those other 44 situations will come to light and be dealt with. Congress could make sweeping regulations on water use for everyone. Think about it - the government is in the health care and financial businesses now - it could happen."



met with this team and said, "We're going to get massive cancellations. It won't kill us but it will hurt. Let's figure out how

to get through the rest of the year and then focus on how we can build a better future for ourselves."

The answer was KnowWater, a program focusing on maintaining and beautifying landscapes while keeping water savings in mind. As a result of this program, which was launched in February 2008 and expanded to include stormwater management this year, HighGrove tripled irrigation revenue in 2008 when others were asking local officials, "My business is dying — when are you going to lift water restrictions so I can get back to work?" McCutcheon says their answer to that was: "I don't see that happening anytime soon. If you are in the irrigation business, you're going to go through a lot of lean years or you should look for something else to do.

"Today, if I walk into a potential client's office and say I want to do a \$120,000 irrigation system renovation, he would probably tell me to get out." McCutcheon adds, saying HighGrove has enjoyed 15% annual growth. "But KnowWater is our differentiation factor. I show him how in less than one year he can recoup that investment in water savings, and then continue the savings each year, and it becomes a nobrainer. If we don't educate ourselves and our customers on better water use, the rules will be written for us without our input. I'm already seeing it."

Fixer upper

Saving money on fuel isn't rocket science. Contractors have been using a combination of better routing, no idling policies and safer driving to save fuel for years. And, recently, more contractors are investing in fuel-saving vehicles to make more immediate savings impacts. The result has been not only a smart economic decision (as long as the new cars are combined with other fuel-saving tactics), but one that comes with a nice social and sustainability benefit

contractors can market to clients.

But decreasing overall water use on clients' landscapes is another story. "In order to reduce water use, there are arguments being made that we need to change the plant pallet and eliminate turf," Andy Smith explains. And the message is spreading. A recent Southern Nevada Water Authority ad shows sod as a worker in a cubicle, his hands behind his head, legs up on the desk. The copy reads: "Sod. It just doesn't work."

"But I don't believe if you eliminate

turf it solves the problem," Andy Smith says. "Not to mention that by this definition a low water use landscape is also a low producing landscape in terms of our economic survival."

Andy Smith is talking about the oxygen-producing, carbon sequestration benefits of turf and plants. Turf captures four times more carbon from the air than is produced by the engines of today's lawn mowers, with well-managed lawns (those with proper height, nutrition, water and root zones) bringing a net carbon intake five to seven times higher than their non-managed counterparts.





COVER STORY

according to Ranajit Sahu, an independent environmental and energy expert.

But despite these benefits, all industry experts agree turf doesn't belong everywhere. In Arizona and Nevada, for instance, turf is probably not the best choice. "Turf wasn't meant to be grown in a desert," Jennifer Smith says. "But as the population boomed and people

flocked from the Midwest to the Southwest, they wanted to bring their picture perfect green landscapes with them. And no one told them it wasn't OK."

One turf alternative, activists claim, is native plants. But industry professionals say the term "native" needs to be more clearly defined.

In fact, in all of the landscapes Cam-



700 billion

Number of gallons of water residents use on landscape irrigation per day.

— FPA

marata visits regularly, 90% of the plant material there today is "native, adaptive, hardy and sustainable."

And everything McCutcheon uses is drought-tolerant.

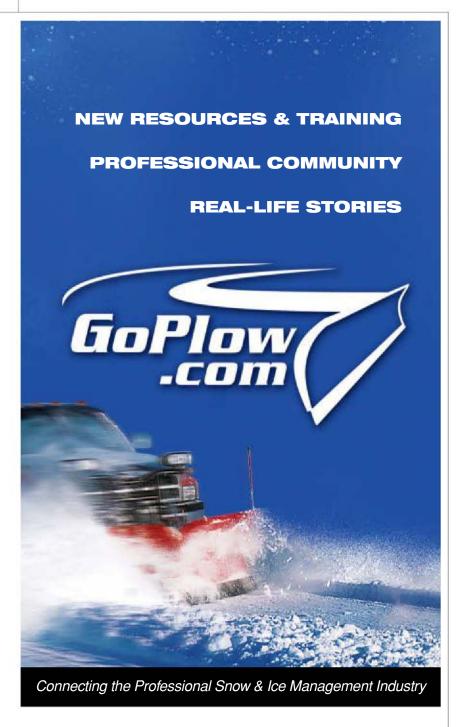
Problem solved? Not quite.

Walk into a nursery, Jennifer Smith explains, and most native plants are lumped together. But two native plants may thrive in very different growing conditions. "So you can install them in a client's landscape, but if they aren't put in the right place, they aren't saving water," she says. In fact, as much as 70% to 80% of all plant problems are related to incorrect watering, according to the Irrigation Association.

Further, a recent University of Florida study shows landscape shrubs need much less water to establish healthy roots than previously thought. The study's objective was to determine how best to irrigate shrubs during establishment. Some of the state's most popular shrubs were evaluated, including both native and non-native species.

"There are no differences between native and non-native species for amount of water required for establishment," says Ed Gilman, a UF environmental horticulture professor.

So the problem isn't replacement of landscape plants and turf — it's challenged soil conditions and wrong plant, wrong place. Plants that require sun are planted in shady spots or plants living under trees that have matured are now



70 to 80

% of plant problems related to incorrect watering.

- IRRIGATION ASSOCIATION

50

% of landscape irrigation water wasted due to evaporation, wind or runoff caused by overwatering.

— EPA

E15

Gasoline with 15% ethanol — a product that hasn't been tested thoroughly enough to be safe for use in outdoor power equipment.

- OPEI



90

% of plant materials used on landscapes today that is native, adaptive, hardy and sustainable.

— LARRY CAMMARATA

not getting the water or sun they need to thrive. "I'm seeing the right plants being used, but not always in the right place or the right soil," Cammarata says.

Many agree the entire outdoor overwatering problem can be solved by looking at the plant-soil-water continuum as a combined picture vs. three separate entities. "It amazes, upsets and saddens me that the industry has lost touch with this," Cammarata says. "Of the three elements, sure, water is the worst offender. But by fixing the plant location and soil, you can reduce the supplemental water that plant needs considerably."

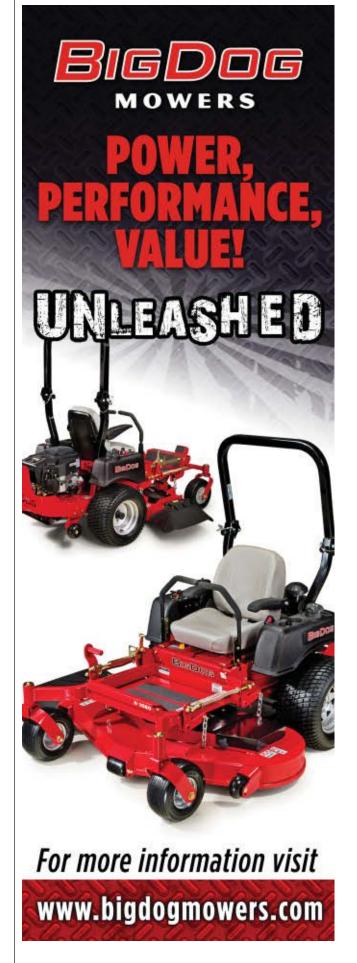
The overwatering of plants - the "just-add-water mentality," as Jennifer Smith calls it - has caused the soil to suffer. "When you overwater, you remove air from the soil and it can't breathe," Cammarata says. "So the nutrient holding capacity of the soil stays at the surface, which dries out in two days. So the plant becomes addicted to supplemental water. The industry needs to quit worrying about saving water for the sake of saving water and start worrying about it for the purpose of healthier soils and more vibrant plant material. I can regenerate the soil structure, increase the microbial activity and make the

landscape more sustainable. And most sustainable plant material doesn't need supplemental watering after establishment."

Customer- or contractor-driven trends?

To drive plant-soil-water education to clients and Brickman branches, Cammarata conducts landscape sustainability audits (instead of irrigation-only audits), factoring plants, soil and water into each and every study.

He says a typical, well-designed, well-built and cared for irrigation system will have a distribution uniformity of between 65% and 85%. Of the 250 audits he's done in the Midwest over the past two years, he has not found one site where the distribution uniformity has been higher than 39%. In five recent sustainability audits he did in Minnesota, he found that 7.8 million gallons of water was being wasted. "These were 30-year-old systems that have never been updated — only patched up. That's \$30,000 or \$40,000 in water savings per year once I update the system."



COVER STORY

Smart irrigation technology has also made advancement leaps. But a smart product, Andy Smith says, is only as smart as the people installing and managing the irrigation system overall. "The technology has improved dramatically, but the quality of the personnel installing the product has decreased dramatically," Cammarata says. In competing bids, there has been the contractor who comes in at \$10,000 less than the others. Today, Cammarata says his client education on the plant-soil-water continuum and a focus on water savings is helping him win the work over the lowest priced provider.

Customers are still driving water savings decisions, just as they have been known to drive plant decisions. But their love affair with lawns makes some people wonder if turf could ever really be challenged — the icon it is, the emblem of ownership pride.

"IT UPSETS ME THAT THE INDUSTRY HAS LOST TOUCH WITH [THE PLANT-SOIL-WATER CONTINUUM]. OF THE THREE ELEMENTS, SURE, WATER IS THE WORST OFFENDER. BUT BY FIXING THE PLANT LOCATION

THAT PLANT NEEDS CONSIDERABLY." — LARRY CAMMARATA. BRICKMAN

AND SOIL, YOU CAN REDUCE THE SUPPLEMENTAL WATER

Recently, a potential client called Jennifer Smith asking her to install subsurface irrigation to water a lawn. His area, however, was "like putting a lawn in the Arizona highlands," she says. "I recommended a reduction of lawn to maximize water savings and still have a nice property. But, later that day, a friend in the business called me and said she got a call from a potential client. She started describing the job and I realized it was the same guy. So the

client wanted what he wanted regardless of right plant, right place, and he was looking for someone who would give it to him. So what do you do? Do the right thing or take the job?

"Other times, you are talking to the just-add-water type of garden steward and you show them how they can save water and they get it — it's an a-ha moment," she adds.

While clients are requesting water saving landscapes, contractors like Jennifer Smith, McCutcheon and Cammarata are also driving sales in this area.

Instead of short-term thinking, they are motivated by the long-term potential. "Water is the oil of the 21st century," McCutcheon says. "It will continue to become incredibly precious and regulated. We'd better get used to using water wisely."

But Jennifer Smith sees is a bit of pessimism in the industry surrounding the education and cost necessary to implement changes in the long run that will transform a business to represent this model and mentality. "I don't want to say it's going to be a phoenix-fromthe-fire type transformation," she says, "but I think with any large movement if people can't adapt, find niche markets and be profitable in what they do, they will disappear while others succeed."

And instead of one area of the industry pitted against another to deflect regulation away from themselves, working in tandem is what will get the most accomplished. As Jennifer Smith says: "If one person is pushing the idea it lacks credibility, but if we do it together, we will have a consolidated front for change."





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Friday, October 29



Headliner Heidi Newfield will be performing at 9:00 p.m.





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MAINTENANCE: TREE CARETOOLS

Ariens

Two precision log splitters, one with 27-ton splitting force and another with 34-ton splitting force, have an open operating zone that promotes less operator bending, reaching and fatigue because operators can walk right up to the work zone. Critical components are located in the front of the machine, which reduces the likelihood of damage from dropped logs. Centrally located controls make it operable from either side. The vertical and horizontal splitting capacity allows one to split larger logs with less lifting. Accessories include log cradle, taillights, work table, engine cover and lighted license

plate bracket. Ariens.com



Swampy Hollow Manufacturing

The new S.H.M. Model WC3000 chipper is belt driven for high-speed performance, with lower horsepower requirement than direct-drive chippers. It's designed to be operated by the PTO shafts of tractors with as little as 16 hp, and fits Category I three-point hitches. Efficient gravity

feed is designed to promote smooth entry of branches and small trees. The hopper opening measures 25×18 in., and the chip opening measures 3×5.5 in. The chip discharge chute can be rotated into two fixed positions. SwampyHollow.com

Corona Clipper

Featuring a high-carbon steel construction and a built-in sprinkler head adjuster, the new Corona Landscape-Irrigation Pruner, model BP 3670, comes with a durable resharpenable and replaceable steel blade for longer service life, as well as a narrow profile hook with a self-cleaning sap groove. Its ergonomic angled pruning head produces less hand stress and fatigue for a more comfortable pruning experience. Contoured handles with non-slip grips give users a firm grasp on the task at hand. The easy-to-use, easy-to-carry AC 8300 Sharpening Tool (sold separately) ensures the BP 3670's cutting performance, season after season. *CoronaClipper.com*





IRRIGATION:

SMART IRRIGATION MONTH

The Bauer Group

The new ProRain F30 and F40 (pictured) hose-reel irrigation machines distribute water over 295ft.-wide strips, ranging from 1,375 to 1,900 ft. in length. Each model is equipped with a pendulum equalizer, for maintaining a level sprinkler. The corresponding wheel cart allows for a variable track width of 5 to 6.5 ft., while the four-speed gearbox and electronically controlled turbine ensure precise precipitation rates. Hydraulic supports make it easy to swivel the reel; mechanical and hydraulic swivel aids are available as options. Machines can be equipped with under- and over-pressure shut-off valves. Bauer also offers solar panels as a standard





Underhill

The new AuditMaster LT Kit includes all the tools necessary to audit and evaluate sprinkler sys-

tem performance, based on Irrigation Association Guidelines and covered in IA audit classes. The kit sets up quickly, and results are typically determined the same day. Contents include a heavy-duty wheeled duffle bag to store the equipment; 30 large CatchCanPro cups with inches and centimeters; 100-ft. measuring tape; 0.75-in. POC hose bib with 160 psi pressure gauge; pitot tube attached to a 30-in. flex hose with 160 psi pressure gauge; sprayhead tester adapter with 160 psi pressure gauge; stop watch; anemometer; 50 yellow marking flags; 21-in. wire staff and 4 x 5-in. flag. *Underhill.us*

Hunter Industries

The new full-featured I-Core controller is available in plastic or metal, in both wall-mounted cabinet and pedestal versions. It's expandable from six to 42 stations, with ICM-600 six-station modules. Boasting a bold, backlit graphic display, the I-Core includes multi-language capa-



bility. Its Diagnostic Dashboard provides the user with a quick and comprehensive status of the entire system and sensors in real time. In addition, the modular design allows station modules to be removed without detaching any field wiring from the controller. HunterIndustries.com

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LAWN CARE: SPREADERS





Bobcat Co.

Mount this attachment on a loader or compact tractor and spread dry, free-flowing granular materials such as seed, fertilizer, sand and salt. The spreader is equipped with a 12-volt DC motor and a 10-in. spreader wheel, controlling the spreading pattern anywhere from 4 to 40 ft. The spinner rate is regulated from the operator seat by a rotary dial switch. The hopper is a high-density polymer with UV protection that can hold up to 5.75 cu. ft. of material. *Bobcat.com*

Ecolawn

The new Ecolawn Self-Propelled Multi-Purpose Applicator helps Green Industry professionals with top dressing, compost spreading, turf renovation, and seeding organic matter. As a way of saving time, labor and operating costs, it spreads a wide variety of materials, including compost, soil mix, pelletized products, calcite clay, crumb rubber, sand and salt. *EcolawnApplicator.com*



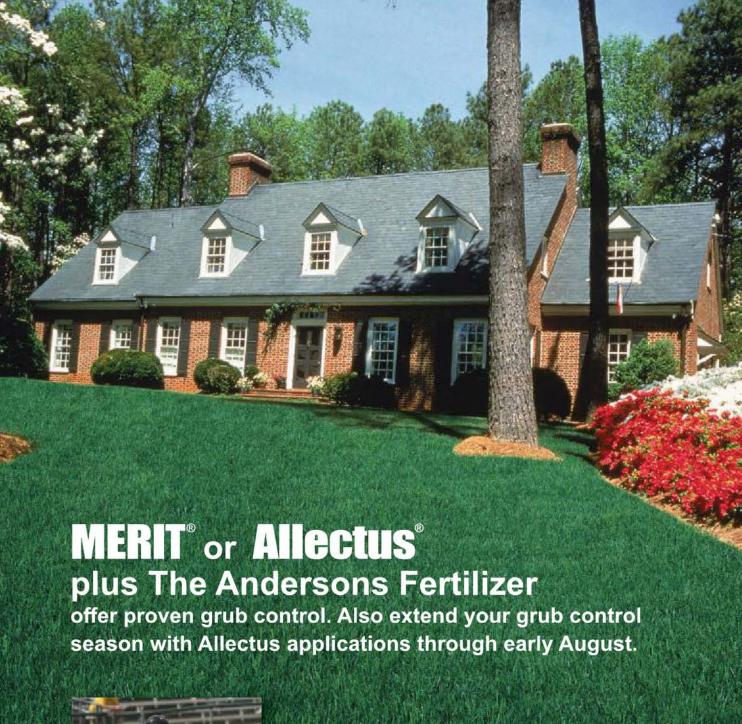
TurfEx

TurfEx introduces two ground-drive spreaders: the 7-cu.-ft. capacity TS700GR and 12-cu.-ft. capacity TS1200GR. Intended for use with tractors and various utility vehicles, the polyethylene spreaders are designed to exert less impact on surfaces than similar tow-behind models. To ensure precise material feed and spread pattern, the spreaders are equipped with a manual flow gate. Additionally, both units include a 12-in. steel spinner with adjustable fins. Spread width is infinitely variable up to 30 ft. *TrynexFactory.com*

SourceOne Outdoor Power Equipment

The TurfSavr starts as a spreader, but also slices and dethatches. When spreading seed in hard soil, use the slicing blades to increase seed penetration. Then change from seed to fertilizer. Remove the hopper, and you have a dethatcher. Add a flail reel, and the TurfSavr will tackle the toughest turf conditions. Powered by a Honda GX270 Series OHV engine (approximately 8 hp), there is plenty of power to slice deep into hard soils, dethatch through tough turf and let the operator direct all the action from the StepSavr sulky. Sourceonex.com/plugr







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LAWNCAREPRO

LM'S OPERATOR OF THE MONTH >>> BY RON HALL



In 1979 **Wayne Volz** wanted a 10-speed bicycle. "My Dad told me that if I wanted it, I would need to earn the money to pay for it," says Volz, president of Wayne's Lawn Service. Volz started mowing nine lawns that summer and the rest is history. He continued mowing through high school, and college. After graduating from college, he had a "real" job for four years working as a financial aid counselor before committing full-time to his business in July 1987.

What's the biggest lesson you've learned as you've built your lawn care company?

Success is not measured by customer count or dollar volume. Those are the two easiest measures of operating a business. True success is measured by customer loyalty and great employee retention. If they're in place, profit dollars will take care of themselves.

You own and operate two companies, Wayne's Lawn Service and also Profits Unlimited. Tell us about Profits **Unlimited.** I started Profits Unlimited to help lawn and landscape companies with the same trials and tribulations I experienced the first nine years I was in business. I was working very hard, had no free time and I was not making any money. Although I had a business degree, I did not know how to bid contracts, market or sell to be successful. These are basic for any successful business.

My biggest issue was that I had little to no structure as to what I was charging for

my services. I was bidding my jobs based on what I thought the market would bear, what I thought my competition was charging and, in many cases, what my potential clients said they were willing to pay for the services I offered. This kind of pricing is too common for the industry and is responsible for the staggering failure rate for lawn care and landscaping companies.

I knew there were many lawn and landscape company owners just like me who were struggling with these same issues so we decided to offer our bidding and cost calculation methodology to contractors across North America. Thus, Profits Unlimited was founded in 1990 to help commercial lawn care and landscaping companies earn what they deserve.

How do you find time to run two companies? I'm very fortunate to have my brother

and other loyal, trained and committed employees. Once I realized I must delegate the responsibility and authority of getting jobs completed without me, our businesses grew.

What is your advice to any young person eager to start a lawn service or landscaping company? Remember you're operating a business. Let me emphasis the word business. This business is not just cutting grass and planting shrubs. It's easy to get caught up in the I-am-small-I-cando-it-cheaper mentality and put yourself right out of business. Know your operating costs per hour based on your unique overhead and expenses and charge accordingly. Don't worry about what everyone else is doing. Pick a lane for your company by defining what your company is and what it's going to do better than the competition. Let this separate you

AT A GLANCE

COMPANY: Wayne's Lawn Service Inc.

FOUNDED: 1979

TITLE: President

HEADQUARTERS: Louisville, KY (sole location)

EMPLOYEES: 10 – 13

INDUSTRY INVOLVEMENT:

Past President, Kentucky Lawn Maintenance Association; Past Board Member, Kentucky Turfgrass Council; speaker at industry events; regular contributor to industry publications

BUSINESS GOAL FOR 2010:

Striving for excellence in all aspects of operating our business to create customer loyalty.

FAMILY: Married 27 years to my wife, Jane, and has four children – Kyle, Katie, Daniel and Holly

WEBSITE: wayneslawn service.com and profits areus.com

from the competition. Resist the temptation to compete based solely on price.

Any final thoughts? Check your ego at the door when running your business and surround yourself with people smarter than you are.

KNOW YOUR **OPERATING COSTS** BASED ON YOUR OVERHEAD AND EXPENSES AND **CHARGE ACCORDINGLY."**



Knock out multiple weeds in a single round.

Only Solitare® takes on crabgrass, sedges and broadleaf weeds with no tank mixing required.

Fighting more than one weed problem used to require more than one product. Now there's new Solitare® herbicide from FMC Professional Solutions, the only all-in-one postemergence solution designed to help you control multiple weeds in a single, fast-acting application.

Wherever several weeds like crabgrass, sedges and broadleaf weeds come together, you'll experience the Solitare "sweet spot." That's because Solitare controls or suppresses over 60 weeds without the hassle and cost of tank mixing. Dual-action Solitare herbicide features a patent-pending combination of active ingredients that combats weeds from the foliage down and the root up. Solitare also impacts viability of seeds and tubers within the soil, helping to decrease weed populations this season and next. When multiple weeds gang up on you, there's only one solution you want in your corner: Solitare herbicide.

For more information on Solitare and other solutions from FMC, visit www.fmcprosolutions.com or contact your FMC Sales Representative or local FMC Distributor.



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COMMON SOWTHISTLE

Sonchus oleraceus

IDENTIFICATION TIPS

- This annual is hard to distinguish from perennial sowthistle (Sonchus arvensis) because both species are tall weeds with yellow, dandelionlike flowers and stems that produce a milky sap.
- > Common sowthistle has a taproot and reproduces only by seed.
- > Leaves are bluish-green alternate, clasping the stem with prominent, rounded spiny lobes.
- > Bright yellow flowers bloom from June through August and turn into

white "puffballs" similar to dandelions.

CONTROL TIPS

- > Identify whether you have annual or perennial sowthistle. Herbicides registered for control of one form of sowthistle may not control the other. Check the label carefully.
- > Clopyralid controls both annual and perennial sowthisthle.
- Tillage and low mowing help control annual sowthistle.



BROADLEAF PLANTAIN

Plantago major

IDENTIFICATION TIPS

- > This plant has a short, thick taproot that forms a rosette of leaves that lay flat to the ground.
- > The broad, oval-shaped leaves have three to five prominent parallel veins, and are attached to the root system by a fibrous, celery-shaped petiole.
- > Flowers appear on leafless, unbranched stalks that originate from the base of the plant.
- > It adapts well to most sites — including dry or wet conditions, heavy soils and very low mowing heights.

CONTROL TIPS

- > This species typically requires repeat applications of triclopyr or twoor three-way mixtures of 2,4-D containing products.
- > Helpful turf management practices include conducting soil aeration, avoiding overwatering, and using the proper mower cutting height for each turf species.
- > Once under control, dense stands of turf and ornamentals will shade the soil surface — making establishment of new plantain seedlings more difficult.

For more information regarding these and other turf weeds — and related control technologies and tips — please visit www.DowProvesIt.com or call 800/255-3726.





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BESTPRACTICES

BRUCE WILSON

The author is a partner with the Wilson-Oyler Group. He can be reached at bwilson@questex.com.

What to consider when pricing

ost very successful companies spend a lot of time on the strategy of how to price work to grow their companies profitably. Every proposal is an opportunity. There is usually a cost associated with generating that opportunity, such as a sales call, advertising, marketing cost, etc., and there is also the cost of estimating and putting the proposal together and making the presentation. Every unsuccessful proposal is a lost opportunity.

All is not lost, however, if you can convert knowledge gained through the proposal process into useful intelligence relative to market pricing and positioning for future opportunities. After a failed proposal, continue to probe. Find out what didn't work. Use that to improve new opportunities.

In most cases, price plays a role. But there can be other factors — proposing a higher service level than the customer could afford. You need to consider that ahead of time and prepare a contingency. You have to ask yourself:

- Did I spend enough time up front probing the potential customer?
- ➤ Did I look realistically at what the customer was likely to make the decision upon?
- > Was the person soliciting the proposal even the decision maker?

At our firm, we believe the marketplace ultimately sets the pricing. Therefore, we do not recommend the overhead recovery pricing technique. Customers don't care what your overhead is; they want to pay a competitive rate for the service. As a contractor, you must engineer your company to be profitable within the market pricing.

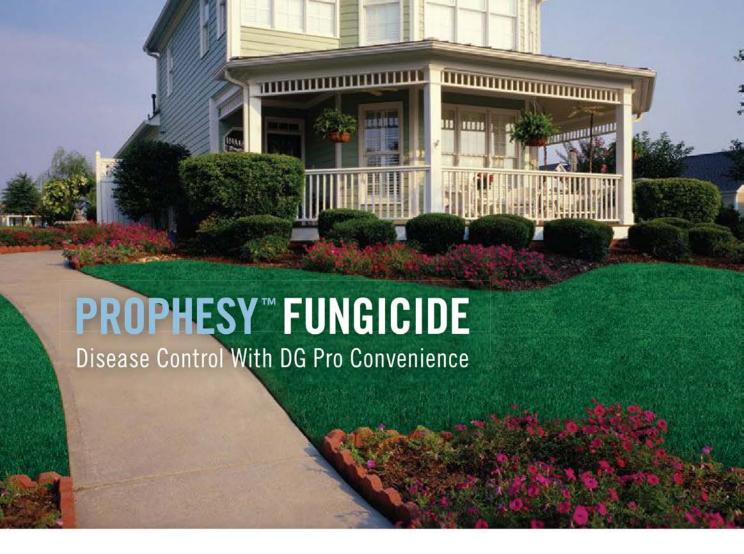
Understanding market pricing is critical to establishing a presence in a market. All too often, new contractors fall prey to the temptation to simply take what the market gives them. But taking only what the market gives you prevents you from building density, which is necessary to build an efficient operation.

Pricing tips

Here are some suggestions to get started:

- Develop an awareness of market segmentation and the ability to pay of various market segments. In many markets, prices are determined by price per door. For example: Apartments frequently have price structures within their rental rates that allow them to pay \$6 to \$8 per door for landscape maintenance services. Factor that into your pricing. This may mean a very basic service level, such as METS (mow, edge, trim and sweep), as opposed to a full-service contract.
- > Consider "break-in" pricing at viable accounts. This pricing strategy is used to help break into a segment or with a certain owner who might handle multiple properties. If you've determined there is opportunity in the segment or with the property owner, you might consider pricing at a lower rate to get your foot in the door. Gradually raise your prices from that point for future work.
- **>** Be sensitive to a prospect's or segment's current financial limitations. For example, for a commercial building with a high vacancy rate, offer low pricing that increases when financial conditions improve.
- **>** Develop an aggressive pricing strategy to develop density. This can eventually result in improved margins once the optimum density level is achieved. An example would be trying to capture most of the properties in a business park. If you could have a work crew spend all day in a single business park, it gives you a significant price advantage: less travel time, less set-up time and simpler supervision.
- > Price aggressively to achieve a dilution of fixed overheads. Adding a large book of business, even at a low margin, may add to your bottom-line. If you were doing \$750,000 in annual sales and had an opportunity to add \$250,000 in new sales, you might be able to do it out of your current facility, without adding overhead staff or support personnel.

Spending more quality time on the strategy of how you position your company to be successful in the selling process can pay huge dividends.



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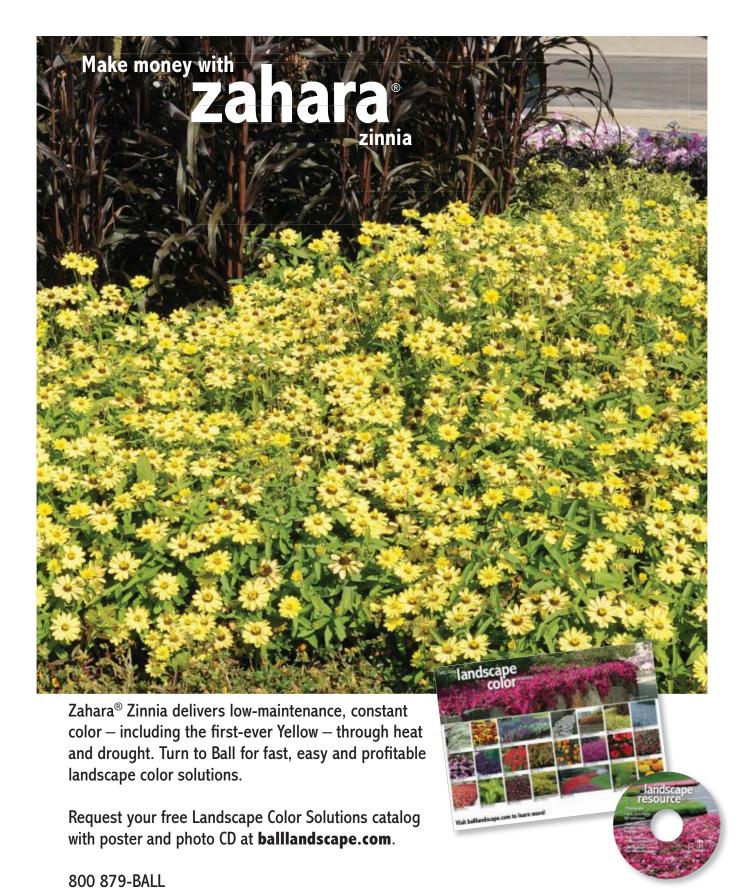
Prophesy fungicide delivered to your turf via fast acting DG Pro technology provides prevention of dollar spot, brown patch, anthracnose, rust and over a dozen other common turf diseases.

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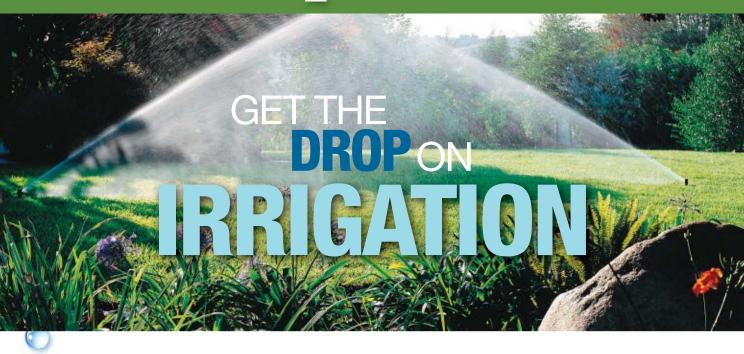






In the special section of LANDSCAPE MANAGEMENT AND SECTION OF LAND

Producing profits through bedding plants, ornamentals & trees



ccording to the EPA, there are about 13.5 million irrigation systems installed in U.S. residential land-scapes, and more than 300,000 new systems are installed each year. Some of those systems contribute to wasted landscape irrigation water, which is estimated to be up to 1.5 billion gallons each day. Clearly, there is a need for the design, installation and maintenance of new, efficient landscape irrigation systems.

Landscapers are in the perfect position to profit from this need while helping to conserve the country's water resources.

Get with the program

If you subcontract irrigation installation, check out the U.S. Environmental Protection Agency's WaterSense partners (www.epa.gov/watersense/) to find irrigation professionals who have been certified under a WaterSense labeled program. The program labels courses and irrigation equipment that meet criteria for water efficiency. With water conservation becoming a more

PROPER PLANNING CAN REDUCE THE AMOUNT OF WASTED IRRIGATION WATER AND INCREASE PROFITS.

BY JAMIE J. GOOCH

widespread concern each year, it might be the right time for landscapers to get certified and provide their own irrigation services.

"There's no doubt that certification could help landscape contractors' businesses," says Rain Bird's Jennifer Riley-Chetwynd. "In some states, certification is required. We'll probably see more states embrace that. Homeowners are opening their eyes to the need to conserve. If they have a choice between certified and not, chances are they're going to choose a certified irrigation professional."

Andy Smith, external affairs director at the Irrigation Association, agrees. He says education is critical to water conservation.

"Frankly there are a lot of people out there who think if it's getting wet, it's getting watered — and that's just not so," he says.

The water needs of a lawn are different from those of a flower bed. Irrigation systems can be designed to efficiently deliver water to both.







BALL VARIETY FOCUS: ZAHARA® ZINNIA

The Zahara® series of heat-loving zinnias has 20% larger flowers than other varieties and a unique array of colors. AAS winners Double Zahara Fire (shown) and Zahara Starlight Rose make an impact in the landscape, and have superior disease tolerance where *Z. elegans* varieties fail. These "Hot Summer Survivors" bred by PanAmerican Seed have very low water needs — a must for water-restrictive areas — and are outstanding in sunny, hot and dry conditions. For more information, visit www.BallLandscape.com.

Proper planning

Even if you're not ready to expand into irrigation services, there are many ways landscapers can help their clients save water, especially when it comes to landscape design. A properly designed landscape can use drought-tolerant color, ornamentals and trees, and place plants with similar water needs together.

"In the past, zoning dedicated to turf irrigation was also used for watering adjacent seasonal color beds," says Jeff Gibson, landscape business manager for Ball Horticultural Co. "This typically results in more water applied to the seasonal color beds than needed, in turn creating a host of disease and maintenance issues. The common problem most landscapes face is overwatering, not underwatering."

You shouldn't feel constrained when designing water-saving landscapes. Plant breeders have made great strides in creating varieties that don't sacrifice big blooms, performance or disease resistance for drought tolerance. Retailers and wholesal-

ers have also become more cognizant of selling native plants that have most of their water needs met via rainwater.

"These days, irrigation is rapidly changing, as are the low-water-need varieties plant breeders are developing today," Gibson says. "The incorporation of betterzoned irrigation, the use of 'smart' controllers, and low pressure/low water emitting heads are all improvements for better care of live plant material, turf or in the beds."

Still, according to the EPA, only about 10% of residential irrigation systems use "smart" weather-based irrigation controllers. But we may be on the verge of wider acceptance.

"A number of models are available now, and prices are coming down each year," says Dale Devitt, professor of soil and water and director of the Center for Urban Water Conservation at the University of Nevada, Las Vegas. "There has been extensive testing on them. In all cases, water savings associated with using smart controllers are at least 20%."

Water where you want it

Drip irrigation is another way to get precise amounts of water directly to the plants that need it. It can be used alone or as part of a larger irrigation system.

"The advantage of drip irrigation with sparse plantings like flowers and shrubs is that you're emitting water right to the root base," says Riley-Chetwynd. "There is no chance of it being knocked off course by wind, and very little lost to evaporation. The other advantage is that you can change emitters to give more gallons per hour for each plant."







Different drip emitters (left) can be used to provide more water to individual plants. They can be used in conjunction with spray irrigation (above).

From materials to equipment, landscape contractors have options to create the best landscape for the site while conserving water. "The tools are there for us to deliver efficient outcomes across the board — no question," says Smith. "What we need to do as an industry are to pick up these tools and get to work educating customers."

Irrigation design, installation, auditing and maintenance services present a great opportunity for landscapers to

FOR MORE INFO

The Irrigation Association: www.irrigation.org

The EPA WaterSense program:

www.epa.gov/watersense

WaterSmart Innovations 2010: www.WaterSmartInnovations.com

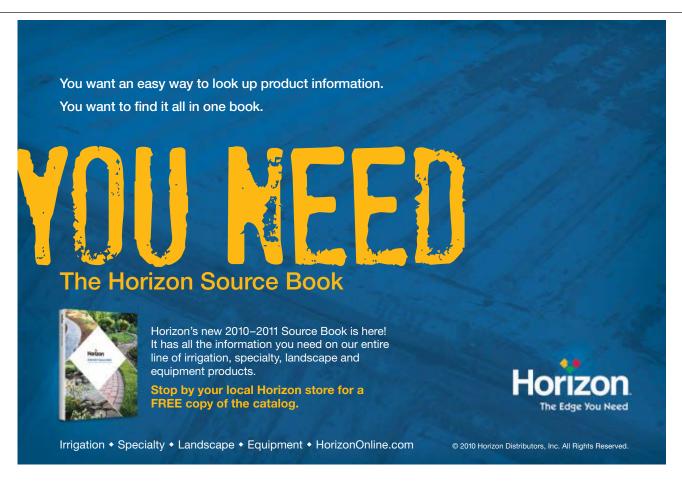
The Irrigation Show 2010:

www.irrigationshow.org

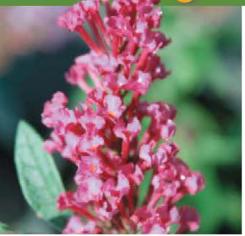
The American Society of Irrigation Consultants: www.asic.org

expand their businesses, retain current customers and save money for their clients over the long-term. With demands for water growing each day, you can feel good about (and market) the fact that your company is doing its part to help reduce the third of residential water that landscaping is estimated to use.

Gooch is a freelance writer based in Northeast Ohio. Contact him at jamie@goochandgooch.com.



lives ares 🕞 new cultivars



New colors for 2011

Pacific Plug and Liner introduces three additional colors — blue violet, ivory and magenta purple — for its Buddleia Buzz series, a group of compact plants ideal for patio containers and smaller gardens. Buzz will reach a height of 24 to 36 in., yet offers butterfly- and bird-attracting blooms the size of a much larger plant. Once established, it is also drought-tolerant. Hardy to USDA Zone 5, Buzz grows quickly in warm weather. PPandL.net

From A to Zinnia

Color-filled Zahara from Ball love the heat and feature 20% larger flowers than other zinnias. They're disease-tolerant and need little watering, according to the company. Tolerant of sunny, hot and dry conditions, Zahara is available in rose, yellow, scarlet and a mixture (pictured). BallLandscape.com



Versatile viola

With a blooming season of fall to spring, summer in mild climates, **Sakata**'s Rebelina can be used in winter baskets, patio containers and in the landscape. Featuring 1.25-in. flowers, Rebelina's many blooms offer a sweet, strong fragrance. Color options include blue and yellow, golden yellow (pictured), red and yellow, and purple and yellow. **Sakata.com**

Award winner

Goldsmith's Dianthus Barbatus 'Diabunda' is uniform in habit and timing, offering full, branched blossoms. Its six colors include pink pearl, purple, red, red picotee, rose and purple picotee, which was the recipient of the 2009 Fleuroselect Industry Award. GoldsmithSeeds.com





Blooms ablaze

Park Seed's Chantilly Deep Orange offers a new color for the snapdragon family, as well as the new "butterfly" form — with open-mouthed flowers crowding along 4- to 4.5-in. stalks. Classified as an intermediate snap, this new variety reaches 36 to 40 in. high in bloom and spreads 12 to 18 in. wide. The blooms cluster tightly in spring and fall (and often through summer, in cool climates). ParkSeed.com

Vine divine

Garden Splendor's Clematis 'Crystal Fountain' begins flowering in late spring or early summer and continues into summer. Another strong burst occurs in late summer and autumn. With its multitude of double flowers and heights of up to 6 ft., it can be trained on archways, pergolas, arbors, trellises or even fences.

Garden-Splendor.com



Compact shrub

New from Proven Winners, Soft Serve is a compact, conical false cypress with soft fern-like branches. The leaves are bright green on top and flecked with silver-blue on the underside. Use in shrub borders, hedges, specimen, perennial borders and containers. Soft Serve requires no to low pruning, and prefers moist, loamy, well-drained, lime-free soils.

PWCertified.com

Formal foliage

'Tuxedo' from Anthony Tesselaar Plants is the firstever black-foliaged ceanothus, or native California lilac. It made its U.S. debut in California in 2009, and is now available nationwide. Powder-blue flowers provide contrast against glossy, deep purple-black foliage in a fall-blooming shrub that grows to 8 ft. high by 6 ft. wide. Tuxedo is also drought-tolerant, and able to thrive on windy slopes and in coastal conditions. Tesselaar.com



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ACUTABOVE

GREEN INDUSTRY MAINTENANCE LEADERS >>> BY DAN JACOBS

Not many 40-year-old company founders can say they've led their companies for 25 years. **Ray Bradley** founded what would become Raymow Enterprises when he was 15 years old. Every time his friends would come over and ask to see Ray, his Mom would tell them Ray was mowing.

From that came the name "RAY-MOW." The company now includes Southern Landscaping Materials and Ray Bradley Real Estate. *Landscape Management* contacted Bradley about the changes, challenges and opportunities his operation faces as it heads into its 26th year of business.

TOPTRENDS

- >> Water conservation. In Florida, the business of conserving this most precious natural resource is big business. With an estimated 1 billion gallons of water being used outdoors every day in our state, Green Industry practices are vital to the conservation movement.
- **Difference of the Second Proof of the Second**
- >> Turf elimination. In landscaping terms, turf is the least expensive material to install, but perhaps the most expensive material to maintain. We have noticed a trend wherein homeowners, homeowner associations and developers are choosing to install more landscape plant material in lieu of turf, which is a plus on many fronts. From the price of installation through to

the maintenance and guarantee of the plant material, this option has proven to be mutually beneficial for Raymow as well as for our clients.

TOP OBSTACLES

>> Federal regulation. From healthcare reform to tax legislation, the current administration continues to make decisions that adversely affect small businesses.



Company: Raymow Enterprises

Headquarters: Tampa, FL Employees: 275 full-time 2009 revenue: \$12.5 million

LM Top 150 Ranking: No. 99

Key to being a maintenance leader: From our vantage point, the key to being a leader in this industry is pretty simple: Do what you say you are going to do when you say you are going to do it. My grandfather preached this to my dad, who in turn preached it to me. It seems cliché, but it has distinguished Raymow from our competitors on many occasions. We are in the relationship business as much as we are in the landscape maintenance business, so by living this motto our integrity is illustrated and our reputation — perhaps our most important asset — is protected.

>>> Devaluing service. With so many inexperienced competitors entering the market, the price — and, therefore, the value of grounds maintenance/landscape services — is being driven down. More often, we are seeing customers choose a contractor based foremost on price opposed to any other factor, such as experience/longevity in the marketplace, reputation, etc. This drives down the quality of service, because oftentimes, those submitting extremely low pricing cannot provide the level of quality service that we professionals in the industry have grown to expect and endeavor toward.

TOP OPPORTUNITIES

- **Recruiting. The high unemployment rate has exposed a pool of highly skilled and educated Green Industry talent. This influx has afforded us the luxury of maintaining our high standards. We are able to spend time getting to know prospective employees during the interview process, to better determine whether they have the skills we're searching for and whether their personality traits are well suited for our culture.
- **Eco-friendly services.** By demonstrating long-term monetary savings opportunities that can be achieved by performing environmentally conscious landscaping tasks for customers, we are able to create universally beneficial situations.
- >> Culture. The resilience of my staff and the preservation of our culture during the economic turbulence of the last couple of years have been a source of motivation and encouragement. I'm amazed by the accomplishments of a team whose perseverance and determination refuse to allow 'losing' to be an option.

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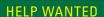
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ASSISTANT/ASSOCIATE PROFESSOR OF SUSTAINABLE LANDSCAPE HORTICULTURE - TENURE TRACK POSITION

The Horticulture and Crop Science Department, Cal Poly State University, San Luis Obispo, CA. Full-time teaching academic year, tenuretrack position starting January 3, 2011. This position is responsible for teaching courses in landscape installation and maintenance, construction, contracting, plant materials and other horticulture classes. Duties include but are not limited to supervising undergraduate research (senior projects) and graduate research (Master's level) in areas of importance to California's landscape industry such as research in water-wise design, installation and maintenance, public uses of landscaped areas, and restoration; updating and refining Cal Poly's landscape program; and establishing a strong leadership role in California's landscape industry. The successful candidate will have the opportunity to further develop the curriculum in landscape horticulture as well as other horticulture areas and is expected to participate in scholarly activities (research, consulting, writing) as part of his/her professional development.

Required qualifications include: Ph.D. in horticulture, plant science, or closely related field with strong demonstrated undergraduate teaching skills with an emphasis in landscape management including design, maintenance, and construction, experience in sustainable landscape practices, and applied research involvement. Professional experience in landscape horticulture is highly desired. Salary commensurate with experience and qualifications. To apply, visit WWW.CALPOLYJOBS.ORG and complete a required online faculty application, applying to requisition #102112. Be prepared to attach a letter of interest, curriculum vitae, and a statement of teaching philosophy. Please see online posting for mailing three letters of recommendation and unofficial transcripts. Official transcripts will be required prior to an appointment. Inquiries can be directed to Dr. David Headrick, Committee Chair, Horticulture and Crop Science Department, (805) 756-5382, dheadric@calpoly.edu. Review of applications will begin August 2, 2010. Applications received after that date may be considered. Cal Poly is strongly committed to achieving excellence through cultural diversity. The university actively encourages applications and nominations of all qualified individuals. EEO

landscapemanagement.net

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GREEN INDUSTRY WEEKLY

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Role reversal & the Age of Necessity

t's the circle of life. As our children grow into adults and we grow into grandparents, we hope our children remember at least some of the things we did for them and lend us a hand during our times of need.

The world's economy is no different. Welcome to seniorhood, America.

"Nine out of 10 people under the age of 15 live in developing countries," says Richard Tozer, a University of Texas graduate-level professor and business management consultant.

Speaking recently to members of the United Producers, Formulators & Distributors Association (UPF&DA), Tozer maintains business owners can expect OK economic times ahead, along with continued access to healthy talent pools.

"There will be slow overall economic growth, thanks primarily to emerging nations — but the U.S. will continue to battle high unemployment and underemployment," Tozer forecasts.

Tozer notes 16% of Americans are unemployed or underemployed, and predicts that daunting rate won't improve much in the next decade because:

- > Ever-improving technology will drive automation further;
- > America's aging Baby Boomers are entering their saving, not spending, years; and
- > Business globalization will keep expanding our world of competitors.

"We need to pinpoint what we do best that makes the most money, focus on that and cut back

In this **Age of Necessity**, how can you better convince customers and prospects your landscape company's services are **'must haves'?**

on everything else," Tozer says. "It's the age of necessity, not luxury."

And so begs the question: In this Age of Necessity, how can you better convince customers and prospects your landscape company's services are "must haves"?

Here are a few perception game-changers tips to help move your services from the "Luxury" to the "Necessity" column of consumers' ledgers:

- > Remind every customer and prospect in all bids, during all property visits, on all invoices, and in all e-newsletters, direct mailings and print advertising — an appealing lawn and landscape can increase a property's value 15%, according to the Professional Landcare Network (PLANET).
- > Property owners investing in lawn and landscape services typically recoup 100% to 200% of their investments, according to information on PLANET's website, www.landcarenetwork.org. In comparison, according to Money magazine, kitchen remodels provide investment recovery rates of 75% to 125%, and bathrooms 20% to 120%.
- > Realtors estimate 95% of people looking to buy homes won't even get out of their cars if the for-sale properties lack curb appeal.
- > Homeowners' and businesses' investments in tree installations can reduce nearby noise 50% percent and site temperatures as much as 9 degrees Fahrenheit, according to the U.S. Environmental Protection Agency and American Forests, a nonprofit conservation organization.
- > Professional landscaping can reduce air conditioning costs up to 50% by shading the windows and walls of a home or business, according to the American Nursery & Landscaping Association's (ANLA's) website, www.anla.org.
- Ninety-nine out of 100 appraisers agree attractive landscaping increases the speed of home sales, according to a survey conducted by the Society of Real Estate Appraisers.

How's that for the customer's bottom line? Now. the key is to spread this good news with customers and prospects every chance you get.



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With all the things you have to do, you don't have time to wait around for your sedge control to start working. That's why FMC Professional Solutions formulated Dismiss turf herbicide for faster, visible control against yellow nutsedge and green kyllinga than any other product. And for most warm season grasses,* FMC created Dismiss South herbicide to deliver all the sedge control of original Dismiss plus enhanced efficacy against purple nutsedge.

Dismiss and Dismiss South start working immediately, producing noticeable signs of control in just 24 to 48 hours. University research trials have demonstrated greater than 90% control within a week, even before other products begin to work. What's more, Dismiss and Dismiss South also prevent sedge tubers from germinating, helping you avoid future outbreaks and reducing the need for re-treat applications. Once you've experienced the fast-acting, long-lasting control of Dismiss and Dismiss South, you'll wish everything on the job kept you working at top speeds. For more information on Dismiss and Dismiss South, visit www.fmcprosolutions.com or contact your local FMC Sales Representative or FMC Distributor.



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Q4 Plus contains 0.75 lbs ai/acre of quinclorac for enhanced control of grassy weeds such as crabgrass and foxtail. Quinclorac is absorbed by both the leaves and roots and translocated throughout the plant. The effects on grassy weeds include stunting, gradual reddening and yellowing followed by plant death. Q4 Plus also contains sulfentrazone, adding fast-acting yellow nutsedge control as a bonus. Formulated with precise ratios of 2,4-D and dicamba, the weed spectrum is broadened. The combination of these ingredients results in systemic and contact activity with multiple modes of action.

Like Trimec Plus, Q4 Plus offers a single product control option for yellow nutsedge and grassy and broadleaf weed control in established turfgrass areas. Users appreciate the convenience of one product for crabgrass, yellow nutsedge and broadleaf weed control making this a versatile all-in-one product.

Q4 Plus has dramatically less discoloration on cool-season turf compared to MSMA. Call-backs are a thing of the past when your clients and members can see fast results, usually within 24 to 48 hours.

Q4 Plus is highly selective on coolseason turf grasses. Labeled species include bluegrasses, perennial and annual ryegrasses, fescues and bermudagrass. Q4 Plus has a CAUTION signal word, a good toxicological profile, is rain-fast in 6 hours and has a 4 week reseeding interval.

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- Post-emergence control of both grassy and broadleaf weeds
- Crabgrass and foxtail control
- Extra knockout power on grassy weeds
- Contains 0.75 lbs ai/acre of quinclorac
- Yellow nutsedge control

- Fast visual response
- Rapid activity and death of broadleaf weeds
- Wide window of application for broadleaf weeds
- Suitable for applications up to 90°F
- Labeling includes use on bermudagrass



RECOMMENDATIONS

Q4 Plus is recommended for the control of crabgrass, yellow nutsedge and certain grassy weeds, such as foxtail and for the control of most troublesome broadleaf weed species in established cool-season and bermudagrass turf areas. Use sites include lawns, golf courses, cemeteries, public parks, sports turf, sod farms and other sites.

ACTIVE INGREDIENTS:

Quinclorac	8.43%
Sulfentrazone	0.69%
2,4-D, dimethylamine salt	11.81%
Dicamba, dimethylamine salt	1.49%
Inert Ingredients	77.58%

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4 X 1 gallon per case:	
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30-gallon drum; shipping weight 305 l	bs

- READ LABEL BEFORE USE -

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ACTIVE INGREDIENTS:

Quinclorac	8.43%
Sulfentrazone	0.69%
2,4-D, dimethylamine salt	11.81%
Dicamba, dimethylamine salt	
INERT INGREDIENTS:	77.58%

THIS PRODUCT CONTAINS:

0.75 lb. 3,7-dichloro-8-quinolinecarboxylic acid per gallon or 8.43%.
0.06 lb. N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl] phenyl]methanesulfonamide per gallon or 0.69%.

0.88 lb. 2,4-dichlorophenoxyacetic acid equivalent per gallon or 9.81%. 0.10 lb. 3,6-dichloro-o-anisic acid equivalent per gallon or 1.24%.

Isomer Specific By AOAC Methods.

CAS Registry Numbers: Quinclorac (84087-01-4), Sulfentrazone (122836-35-5), Dicamba, dimethylamine salt (2300-66-5), 2,4-D, dimethylamine salt (2008-39-1).

KEEP OUT OF REACH OF CHILDREN CAUTION

Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle. (If you do not understand the label, find some one to explain it to you in detail.)



PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Harmful if swallowed.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are natural rubber, natural rubber blends and laminates. If you want more options. follow the instructions for category A on an EPA chemical-resistance category selection chart.

All mixers, loaders, applicators, and other handlers must wear:

- · long-sleeved shirt and long pants,
- · protective eyewear (such as goggles, face shield, or safety glasses),
- · shoes and socks,
- · chemical-resistant gloves (except for applicators using ground boom equipment) and
- · chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

User Safety Requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

- · Users should wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid	
If in eyes:	 Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If swallowed:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
If on skin or on clothing:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
l I I according to the control of th	

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-888-800-5556 for emergency medical treatment information.

Environmental Hazards

TOTAL 100.00%

This pesticide may be toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Physical and Chemical Hazards

Combustible. Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170.

This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- · coveralls worn over short-sleeved shirt and short pants.
- · chemical-resistant footwear plus socks,
- · chemical-resistant gloves made of any water-proof material and,
- protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

1. Product Description

4-in-1 Herbicide

Q4® Plus Turf Herbicide for Grassy & Broadleaf Weeds contains four (4) active ingredients including quinclorac and sulfentrazone that broaden the spectrum of weed control. Q4 Plus Turf Herbicide for Grassy & Broadleaf Weeds is a versatile herbicide that will control many troublesome grassy and broadleaf weeds in established turfgrass when used as directed.

4-in-1 is better than 3-in-1

- Versatile post-emergent herbicide for turfgrass to control both grassy and broadleaf weeds.
- Quinclorac is absorbed by foliage and roots and translocated throughout the plant where it uses multiple modes of action to control both grassy and broadleaf weeds. One mode of action involves an auxin-type herbicidal activity which disrupts plant growth in broadleaf weeds, while another mode of action works as an enzyme/cell wall disruptor to control crabgrass and other grassy weeds.
- The effects on grassy weeds include stunting, gradual reddening, yellowing and followed by tissue death. Symptoms typically appear 7 to 14 days after application.
- Sulfentrazone provides post emergent weed control for common weed species in turfgrass such as spurge. Foliar contact of sulfentrazone on emerged, susceptible weeds results in rapid dessication and plant tissue death.
- Wide window of application for broadleaf weeds beginning at emergence and active weed growth.
- The symptoms of susceptible broadleaf weeds resemble those of 2,4-D and include leaf and stem curl or twisting, and tissue death.

2. Where To Use

This product provides broadleaf control in warm-season and coolseason turfgrass in five (5) use sites. See tables 2 and 3 below for turfgrass species that can be treated with Q4 Plus Turf Herbicide for Grassy & Broadleaf Weeds.

- Residential/domestic sites are defined as areas associated with the household or home life including, but not limited to apartment complexes, condominiums, and patient care areas of nursing homes, mental institutions, hospitals, or convalescent homes.
- Ornamental sites include turfgrass established around residences, parks, streets, retail outlets, cemeteries, industrial and institutional buildings, recreation areas, fairgrounds, areas adjacent to athletic fields and paved areas.
- Institutional sites are defined as turf areas around properties or facilities providing a service to public or private organizations including, but not limited to hospitals, nursing homes, schools, museums, libraries, sport facilities, golf courses (fairways and roughs), and office buildings.
- Non-cropland sites include Highway rights-of-way (principal, interstate, county, private, and unpaved roads); roadsides, roadside ditches, road shoulders, road embankments, dividers and medians; municipal, state and federal lands; airports and military installations.
- · Agricultural site: Commercial sod production

Prohibitions of Sites:

- Do not apply to any body of water such as lakes, streams, rivers, ponds, reservoirs, or estuaries (salt water bays). Do not apply to any shorelines (non-cropland sites adjacent to the edges of a body of water) for lakes, streams, rivers, ponds, reservoirs, or estuaries (salt water bays).
- Do not apply to wetlands (swamps, bogs, potholes, or marshes).
- Do not apply to agricultural irrigation water or on agricultural irrigation ditchbanks and canals.
- Do not apply to agricultural drainage water or on agricultural ditchbanks.
- DO NOT apply Q4 Plus Turf Herbicide for Grassy & Broadleaf Weeds to the following:

Bahiagrass Bentgrass Carpetgrass

Centipedegrass

Dichondra

St. Augustinegrass Greens and collars at golf courses

Lawns with desirable clovers or legumes

Ornamentals (flowers, trees, groundcovers, landscape beds and shrubs)

Turfgrass tolerance:

- Turfgrass tolerance to this product may vary and temporary turfgrass yellowing may occur on fine fescues and Bermudagrass (see specific Bermudagrass sections). Apply only to fine fescue when it is part of a mixed stand of cool-season turf/ cool-season blends.
- Tolerant turf species listed on this label may exhibit temporary turf injury. The best tolerance occurs under optimal conditions for the turfgrass.
- Adverse environmental conditions may reduce the selectivity on the turfgrass. Injury may occur under marginal conditions (e.g. low temperatures and drought stress) or under extreme conditions (e.g. high temperatures and high humidity). To avoid turf injury, use only on turfgrass that is reasonably free of stress from diseases, insects, excess heat or cold, drought or excess rainfall/irrigation, shaded areas, low soil pH, nematodes, improper mowing or improper applications of fertilizer and pesticides. Under any of these stress conditions, any turf damage caused by the use of this product is beyond the control of PBI/Gordon Corporation and all risk is assumed by the buyer and/or user.
- Certain spray tank additives (adjuvants, wetting agents, surfactants), liquid fertilizers, and tank mixtures containing emulsifiable concentrates may reduce the selectivity on the turfgrass. Use adjuvants and spray additives or tank-mix combinations only when your experience indicates that the tank mixture will not result in objectionable turf injury.
- Do not broadcast apply this product when temperatures are above 90°F; some injury can also be expected with spot treatments when air temperatures exceed 90°F.

3. Cultural Tips

For newly seeded areas:

Delay application of this product to grass seedlings until after the second or third mowing, or 28 days after emergence.

For newly sodded, sprigged, or plugged areas:

The application of this product to newly sodded, sprigged, or plugged grasses should be delayed until 3 to 4 weeks after the sodding, sprigging, or plugging operations.

Seeding:

Turf species listed on this label can be seeded into the treated areas at four (4) weeks after the application of this product.

Irrigation:

Do not apply this product immediately before rainfall or irrigation. For best results, do not irrigate or water the turfgrass within 24 hours after application. If dry conditions exist, a scheduled irrigation or watering 24 hours before and 24 hours after application is recommended. If rainfall does not occur in 2 to 7 days after application, irrigation of at least one-half inch is recommended.

Mowing:

Delay mowing 2 days before and until 2 days after the application of this product. Additional stress from low mowing heights may increase the possibility of turf injury. Clippings from the first three mowings should be left on the treated area. Do not use these clippings as mulch or compost around flowers, ornamentals, trees, or in vegetable gardens.

4. Spray Preparation

Mixing with Water:

Add one-half the required amount of water to the spray tank, then add Q4 Plus Turf Herbicide for Grassy & Broadleaf Weeds slowly with agitation, and complete filling the tank with water. Mix thoroughly and continue agitation while spraying.

When this product is left standing for extended periods of time, re-agitate to assure uniformity of the spray mixture.

Mixing with Liquid fertilizers:

In certain applications, liquid fertilizer may replace part of the water as a diluent.

ALWAYS PREMIX Q4 PLUS TURF HERBICIDE FOR GRASSY & BROADLEAF WEEDS <u>WITH</u> WATER BEFORE ADDING TO FLUID FERTILIZERS. For liquid nitrogen solutions such as UAN or urea solutions, use a premix of 1 part of this product with 4 parts of water or use a premix with a 1:4 ratio of product to water. For other fluid fertilizers such as suspensions, use a premix of 1 part of this product with 50 to 60 parts of water.

Use suitable sources and rates of fertilizer based upon local recommendations. Refer to the mixing directions on the labels of the liquid fertilizers. Always perform a jar test for compatibility before large scale mixing.

The jar test can be conducted by mixing all components in a small container in proportionate quantities. If the mixture separates after standing and can be mixed readily by shaking, then the mixture can be used and applied with spray equipment providing continuous agitation. If large flakes, sludge, gels or other precipitates form, or if a separate oily layer or oil globules appear, then the herbicide and the liquid fertilizer should not be prepared as a tank mixture.

5. Spray Equipment

Ground equipment: Power sprayers fitted with a boom or spray wand/gun may be used for broadcast applications and spot treatments. Boom sprayers equipped with appropriate flat fan nozzles, tips, and screens are suitable for broadcast applications. For best spray distribution and coverage, select a spray volume and delivery system that will ensure accurate and uniform coverage.

Hand-operated sprayers including backpack sprayers and compression sprayers are appropriate for small turfgrass areas. Calibration and proper application are essential when using this product.

Cleaning spray equipment: Clean sprayer before and after using this product. Use soap, household ammonia, detergent and water, or an approved spray tank cleaner and rinse thoroughly. Cross-contamination may cause physical incompatibility (mixing problems) or result in turf injury.

Spray distribution:

- The accuracy and uniformity of the herbicide distribution is the sole responsibility of the applicator.
- Uniform applications are essential when using this product. Overapplication, excessive overlaps, or rates above those specified on this label can cause turf injury.
- Avoid spray overlaps with hand-held equipment: Wands fitted with flat fan nozzle tips may be used with the appropriate technique. Spray wands fitted with flat fan nozzles should not be waved in a back-and-forth motion, or in a side-to-side motion, or in a swinging arm motion. Instead, the nozzle should be held stationary at the proper height. Side-to-side motion results in uneven coverage. To avoid excessive spray pattern overlaps, a spray colorant may be used.
- This product may cause injury to susceptible/non-target plants at the use site by contacting the foliage, stems, or roots. To prevent injury to susceptible crops and other desirable broadleaf plants including but not limited to cotton, legumes, tobacco, tomatoes, garden/vegetable crops, and ornamentals (flowers, trees, and shrubs) avoid contact with the spray solution, spray droplets, and spray mist (fine droplets).

Chemigation: Do not apply this product through any type of irrigation system.

Aerial application: Do not apply as an aerial application.

6. Spray Drift Management

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of ground application can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a Coarse or coarser spray, apply only as a Coarse or coarser spray (ASAE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a Medium or more fine spray, apply only as a Medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including, but not limited to, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a Medium spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a)conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to, cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates. Additional requirements for ground boom application: Do not apply with a nozzle height greater than 4 feet above the turf canopy.

7. Post Emergent Control of Grassy Weeds

Q4 Plus Turf Herbicide for Grassy & Broadleaf Weeds can provide post emergent control and suppression of the grassy weeds listed in Table 1. Apply to weeds during the growth stages as shown in Table 1. Applications under adequate soil moisture conditions are preferred. Early summer treatments are generally more effective. Applications in the summer (approximately July 15 to August 15) to older, drought stressed grassy weeds are less effective. Late summer applications (after August 15) to mature crabgrass can be very effective. Weed control is affected by the spray volume, timing and the weed growth stages (see Tables 1, 2, and 3).

TABLE 1. Leaf stages	TABLE 1. Leaf stages of grassy weeds and yellow nutsedge for optimum control.				ntrol.	
Weed species	1 to 3 leaf	4 to 5 leaf (1 tiller)	6 leaf (2 tillers)	7 leaf (3 tillers)	8 leaf (4 tillers)	Mature (late season)
Crabgrass, (large and smooth), Barnyardgrass, Foxtail, (green, yellow and giant), Signalgrass, (broadleaf)	Х	Х	Х	Footnote 1	Footnote 1 (reduced control)	Х
Nutsedge, (yellow)	Х	Footnote 1	Footnote 1	Footnote 1	Footnote 1 (reduced control)	Х

'Second or follow-up applications on ornamental turfgrass may be required. Early summer treatments are generally more effective. Applications in the summer (approximately July 15 to August 15) to older, drought stressed grassy weeds are less effective. Late summer applications (after August 15) to mature crabgrass can be very effective.

8. Post Emergent Control of Broadleaf Weeds

Apply this product to broadleaf weeds that are young and actively growing for the best results. Spring and fall treatments under adequate soil moisture conditions are preferred to the summer treatments. Generally, summer broadcast applications to older, drought stressed weeds are less effective. Fall applications provide improved control for emerged winter annuals and perennials such as henbit, chickweed, clover and ground ivy.

9. Applications

The maximum number of broadcast applications is limited to 2 per year. Spot treatments during the spring and summer are suitable for sparse infestations or as a follow-up treatment to a broadcast application on an "as-needed" basis. Second or follow-up applications as

either broadcast or spot treatments should be made after the initial application on ornamental turfgrass and are recommended for more mature weeds, for dense infestations and for adverse environmental conditions.

Other situations that may need two broadcast or follow-up treatments include the following:

- Under certain conditions, applications of this product at the 3 to 4 tiller stage of the annual grasses may not provide complete control.
- All weed grasses do not germinate at the same time. The period of germination for crabgrass and annual grasses can extend into the summer after the initial application of this product and results may be poor and erratic.
- Dense infestations of weeds may prevent thorough spray coverage of the target weeds.
- Biotypes of large and smooth crabgrass in California have shown varied response to quinclorac. If control failure occurs following a second application, do not reapply this product. Change to a herbicide with a different mode of action.

Extremes in environmental conditions, ie. temperature and moisture, soil conditions, and cultural practices may affect the activity of this product. Under warm moist conditions, herbicide symptoms may be accelerated. Under dry conditions, the expression of herbicide symptoms is generally delayed, and weeds hardened off by drought may be less susceptible to this product.

If objectionable turf injury occurs with the first application,then avoid making the second application of this product until the turfgrass recovery is complete.

Do not broadcast apply this product when temperatures are above 90°F temporary turfgrass discoloration can also be expected with spot treatments when air temperatures exceed 90°F.

State Restrictions:

Arizona: Do not use this product on sod farms in Arizona.

California: Make broadcast applications only between March 1 and September 1. If troublesome weeds appear during other times of the year, a spot application can be made. While irrigation is necessary and important for plant growth, apply irrigation water efficiently so that no more than 125% of the net irrigation requirement is applied for any irrigation event. Apply efficient irrigations for six months following application of sulfentrazone containing products. Do not apply product to bare ground.

New York: Not for sale, distribution or use in New York State.

TABLE 2. BROADCAST TREATMENTS FOR COOL-SEASON TURFGRASS				
Application Site	Use Rate per Application			
Kentucky Bluegrass, Perennial ryegrass, Fescues, Annual Bluegrass <i>(Poa annua)</i> , Rough Bluegrass <i>(Poa trivialis)</i> , Annual Ryegrass				

Spray Volume For Conventional Spray Equipment: Use 50 to 220 gal./A (1.2 to 5.0 gal./1000 sq. ft.).

For Low Volume Spray Equipment (such as PermaGreen Equipment and backpack sprayers): Equipment should be calibrated to apply at least 20 gallons per acre (0.45 gallons/1,000 sq. ft.). Use this lower spray volume (0.45 gallons/1,000 sq. ft.) only when your experience indicates that this volume provides effective weed coverage, adequate weed control, acceptable turf safety/tolerance, and will not result in objectionable turf injury.

Note: Use the higher spray volumes (more than 50 gpa) for dense weed populations.

TABLE 3. BROADCAST TREATMENTS FOR BERMUDAGRASS		
Application Site	Use Rate per Application	
Bermudagrass (common and hybrid)	5 to 7 pints/A (1.8 to 2.6 fl. oz./1000 sq. ft.)	

Spray Volume For Conventional Spray Equipment: Use 50 to 220 gal./A (1.2 to 5.0 gal./1000 sg, ft.).

For Low Volume Spray Equipment (such as PermaGreen Equipment and backpack sprayers):

Equipment should be calibrated to apply at least 20 gallons per acre (0.45 gallons/1,000 sq. ft.). Use this lower spray volume (0.45 gallons/1,000 sq. ft.) only when your experience indicates that this volume provides effective weed coverage, adequate weed control, acceptable turf safety/tolerance, and will not result in objectionable turf injury.

- · Apply only when Bermudagrass is actively growing.
- Expect temporary discoloration.
- Some Bermudagrass hybrids are moderately tolerant to this product and may be more susceptible to discoloration.
- For Bermudagrass hybrids, use lower rates until tolerance to injury can be determined.
- It is impossible to test all environmental conditions and all Bermudagrass hybrids.
 We suggest testing this product on a small area and observe the treated area for 30 days (during normal growing conditions) to determine the acceptability of turf discoloration.
- Some stunting of the Bermudagrass should be expected and turf generally recovers in 7 to 21 days.
- Do not apply in the fall during fall-to-winter transition period.
- Do not apply in the spring during winter-to-spring transition period.
- To avoid turf injury, use only on Bermudagrass that is not under stress from diseases, insects, excess heat or cold, drought or excess rainfall/irrigation, shaded areas, low soil pH, nematodes, improper mowing or improper applications of fertilizer and pesticides.
- · For optimum results:
- Irrigate 24 hours before and 24 hours after application with 1/2 inch of water.
- The addition of nitrogen fertilizer or chelated iron (such as FeRROMEC® Plus MICROS) may reduce some turf discoloration.
- Spray in the morning hours and avoid application during extreme hot or dry conditions.
- Equipment calibration is essential and avoid spray overlaps.
- Do not use higher pressure equipment, spray pressure should be 40 psi or lower.

SPOT TREATMENTS:

- Calibration and proper application are essential when using this product. Spray coverage should be uniform and complete.
- · Over applications can result in turfgrass injury.
- Cool-Season Turf listed in Table 2: Mix 2.6 to 3.0 fl. oz. of this product with 1.0 gallons of water for treatment of approximately 1,000 sq. ft. of turfgrass. Apply to weeds during the growth stages as shown in Table 1.
- Warm-Season (Bermudagrass): See specific Bermudagrass directions in Table 3. Mix 1.84 to 2.57 fl. oz.. of this product with 1.0 gallons of water for treatment of approximately 1,000 sq. ft. of turfgrass. Apply to weeds during the growth stages as shown in Table 1.

Limitations for use on Ornamental Turf and Non-Cropland areas:

The maximum number of broadcast applications is limited to 2 per year with a minimum of 30 days between applications. The maximum application rate is 8 pints of product per acre per application. The maximum seasonal rate is 16 pints of product per acre per year.

Limitation for use on Sod Farms:

The maximum number of broadcast applications is limited to 2 per year with a minimum of 21 days between applications. The maximum application rate is 8 pints of product per acre per application. The maximum seasonal rate is 16 pints of product per acre per year.

10. Weeds Controlled

Q4 Plus Turf Herbicide for Grassy & Broadleaf Weeds will control or suppress the following. Apply when weeds are young and actively growing.

WEEDS

Aster, white heath & white prairie Barnyardgrass Bedstraw Beggarweed, creeping Bindweed Black medic Broadleaf plantain Buckhorn plantain Bull thistle Burdock, common Buttercup, creeping Carpetweed Chickweed, common Chicory Cinquefoil Clovers Crabgrass^{1, 2} (large and smooth) Curly dock Dandelion Dayflower Deadnettle Dock Dogfennel Dollarweed (*pennywort) English Daisy1 False dandelion (*spotted catsear & common catsear) Field bindweed (*morningglory & creeping jenny) Field oxeye-daisy (*creeping oxeye) *Synonyms

Filaree, whitestem & redstem Florida betony Florida pusley Foxtail¹ (green, yellow and giant) Ground ivy Groundsel Geranium (Carolina) Hawkweed Healall Henbit Innocence (Blue-eyed Mary) Knotweed Lambsquarters Lawn burweed Lespedeza, common Mallow, common Matchweed Morningglory spp. Mouseear chickweed Nutsedge, yellow Old world diamond flower Oxalis (*yellow woodsorrel & creeping woodsorrel)
Parsley-piert Poison oak Prickly lettuce (*compass plant) Puncturevine Purple cudweed Purslane Ragweed Redweed Red sorrel (*sheep sorrel) Shepherdspurse Signalgrass¹ (Broadleaf) Speedwell *Veronica (Common, Slender and Thymeleaf) Spurge Thistles Virginia buttonweed1 White clover (*Dutch clover, honeysuckle clover, white trefoil, & purplewort) Wild carrot Wild garlic Wild geranium

Wild lettuce

Wild onion

Wild Violet1

Yellow rocket

and many other weeds

Yarrow

Wild mustard

Wild strawberry

¹Follow-up application may be required.

²Biotypes of large and smooth crabgrass in California have shown varied response to quinclorac. If control failure occurs following a sequential (or follow-up) application, do not reapply this product. Change to a herbicide with a different mode of action.

Pennsylvania

smartweed

Pepperweed

Pineappleweed

Pigweed

Plantain

Poison ivy

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE: Store in original container in a locked storage area inaccessible to children or pets. Keep from freezing.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

For nonrefillable containers with capacities equal to or less than 5 gallons:

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning If burned, stay out of

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for

(cont. on next column)

STORAGE AND DISPOSAL (cont.)

10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For nonrefillable containers with capacities greater than 5 gallons:

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning If burned, stay out of

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

OR

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For Refillable Containers:

CONTAINER HANDLING: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Container cleaning: Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

LIMITED WARRANTY AND DISCLAIMER

IMPORTANT: Read this LIMITED WARRANTY AND DISCLAIMER before buying or using this product. By opening and using this product, buyer and all users agree to accept the terms of this LIMITED WARRANTY AND DISCLAIMER in their entirety and without exception. If the terms are not acceptable, return this product unopened immediately to the point of purchase, and the purchase price will be refunded

It is impossible to eliminate all risks inherently associated with use of this product. Damage to the treated article, ineffectiveness, or other unintended consequences can result from use of the product under abnormal conditions such as weather, presence of other materials, or the manner or use of application, etc. Such factors and conditions are beyond the control of the manufacturer, and BY PURCHASING AND USING THIS PRODUCT THE BUYER AND ALL USERS OF THIS PRODUCT AGREE TO ACCEPT ALL SUCH RISKS. Buver and all users further agree to assume all risks of loss or damage from the use of the product in any manner that is not explicitly set forth in or that is inconsistent with label instructions, warnings and cautions.

The manufacturer warrants only that this product conforms to the chemical description given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use, subject to the inherent risks described below. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE MANU-FACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WAR-RANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED.

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THE ARMY KNIFE OF TURF HERBICIDES



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