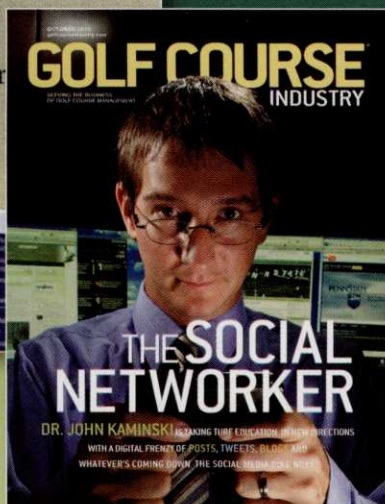
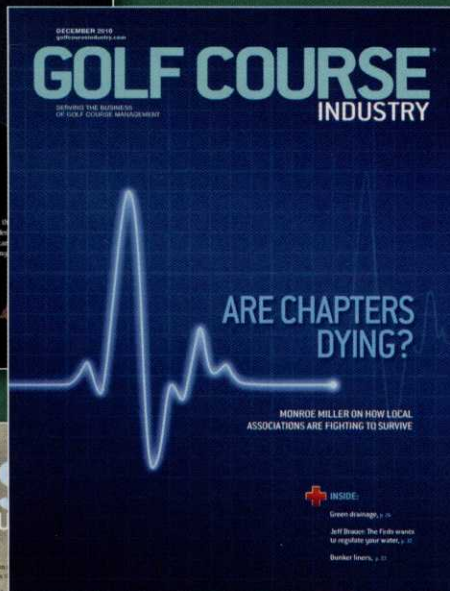


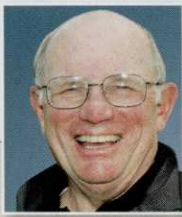
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GOLF COURSE INDUSTRY

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Monroe Miller is a retired golf course superintendent. He spent 36 years as superintendent at Blackhawk Country Club in Madison, Wis. Miller can be reached at groots@charter.net.

HANGING ON 'TIL SPRING

For me, one of the beautiful things about being a golf course superintendent is the extreme and distinct pleasure brought about by the different seasons of the year. Here in the North, we have four well-defined seasons, and each is very different from the others. On a golf course, the work also changes radically from season to season.

I have noticed in my life that about the time I'd get tired of a particular season, the next would slowly arrive. Right now, I am getting a little weary of winter. We have had enough snow and brutal cold to last us this year. Spring will be very welcome.

Make no mistake – I love the winter season. Golf courses are under a cover of snow and colleagues of mine are enjoying some relief from job pressures. That's even truer because we have made it this far with little ice accumulation on turf; we are hopeful of a new season beginning without winter injury.

The snow is not only a beautiful addition to our landscape, but it also is a major recreation feature. Skiing, snowboarding, snowmobiling, snowshoeing and more of the like add fun to the year. Winter gives us hockey, ice fishing and hard-water golf tournaments. We have several good-sized lakes in our town, and the iceboat racing is a big deal, too.

In our state we relished the season the Green Bay Packers gave us, and we were proud of the Badgers despite their loss in the Rose Bowl. We enjoy basketball at all levels, and some even get a real charge from the winter wrestling season. Winter gives us a chance to enjoy the arts more than we might when the weather is warm and the golf course owns us. A few years ago we attended a wonderful performance of the musical "Guys on Ice." It was an American Folklore Theatre play about

ice fishing. The tough ticket this winter was one to see "Guys and Does, a musical about Wisconsin deer hunters and their quest to bag 'da buck.' There is nothing like intellectual stimulation to help pass the time!

I read "The Coldest Winter," David Halberstam's magnum opus about America and the Korean War. GIs were fighting in temperatures as low as -40 degrees, in miserable conditions and weren't treated any better when they returned home than those of us who were soldiers in the Vietnam War. At least that has changed.

The hot stove league gets underway in January, just in time, too. At one

and birds and even rain showers, I sit down and read in Aldo Leopold's "Sand County Almanac." He was as good of a writer as he was a conservationist, and could write about the seasons better than anyone else.

But none other than Arnold Palmer wrote the best and most wonderful words about spring back in 1965:

"Especially in the spring of the year, when the first warm sun presses down on your shoulders, when the grass has just been mowed for the first time and sits there damp and green, with its fresh-cut smell floating up to your nostrils, when the sky is a deep blue roof over your head and an occasional

"In midwinter, when you're not paying attention, you'll hear the soft sound of a piano playing "Song of the South." You'll see a gently fluttering yellow **Masters flag on a yellow flagstick** against the bright green of Augusta National and hear Jim Nantz's rich baritone inviting you to watch the Masters in the first week of April. That is when you suddenly realize spring isn't that far away."

point this winter, 48 of our 50 states have snow cover somewhere. You can pretty much figure people all over were starting to think, "When is it going to be spring?" That emotion begins to heighten when the GIS is over, the local turf conferences are past, and the days are noticeably longer.

In midwinter, when you're not paying attention, you'll hear the soft sound of a piano playing "Song of the South." You'll see a gently fluttering yellow Masters flag on a yellow flagstick against the bright green of Augusta National and hear Jim Nantz's rich baritone inviting you to watch the Masters in the first week of April. That is when you suddenly realize spring isn't that far away.

For many years, in late winter, when the aching for spring and golf

cloud drifts by so white that it dazzles your eyes, a golf course is an intoxicating place. That was the sort of day, this was the sort of happiness that we kept waiting for all winter when I was growing up in western Pennsylvania. The winters are long and hard around Latrobe, my hometown: the golf course usually was frozen over the middle of December; we had to content ourselves with skiing until that first perfect day came along some time toward the end of March. We dreamed about it all winter and went out of our minds when it finally arrived."

It would be a safe bet that most golf course superintendents in places like the one where Mr. Palmer grew up are also going slightly out of their minds these last few days of winter. Hang on – it's almost here! **GCI**

Motivator

Debbie
Downer

Building your personal brand

By Brenda Bence

How employees, colleagues, members and guests perceive you can impact your efforts at your golf facility. Here are eight ways to maintain and maximize a positive personal brand.

Every day at work, a golf course superintendent – or any manager, for that matter – runs the risk of damaging his or her personal brand – even if they don't think they have one.

A personal brand is the way people perceive, think and feel about a manager in relation to others. The people who work at an organization already have perceptions, thoughts and feelings about their superiors, so just by virtue of being “the boss” in the workplace, a manager already has a personal brand.

The question is whether a golf course superintendent has the personal brand he wants – one that is bringing them greater success or holding them back. Not knowing the answer to this question could mean the difference between a department that stays land-locked

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“The question is whether a superintendent has the personal brand he wants – one that is bringing them greater success or holding them back.”

and one that skyrockets. Here are eight ways to keep personal brand damage under control.

GET CLEAR ABOUT WHAT YOUR CURRENT BRAND STANDS FOR RIGHT NOW. This means discovering how people perceive, think and feel about you in the present moment. Enlist a friend you trust to ask several work colleagues for the top five words they would use to describe you. Are you described the way you want to be? If not, your personal brand needs some adjustments.

DETERMINE WHERE YOU NEED TO MAKE IMMEDIATE CHANGES. If you aren't happy with the results of your research, that's good news. Why? Because it will clarify exactly what you need to change to create the brand you want.

DEFINE CAREFULLY WHAT YOU WANT YOUR BRAND TO BE. Once you have an idea of where your current personal brand is failing, you need to define your desired personal brand. Most people struggle with their personal brands because they haven't taken the time to clearly define them. Not having a personal brand definition is like meandering from point A to point B without a map. You might get there eventually, but you'll make a lot of wrong turns along the way.

So, take some time to consider: How do you want to be known? What are your strengths, and how can you best fill the needs of your brand's "target audience" – i.e., your employees and/or your customers?

COMMUNICATE YOUR BRAND EFFECTIVELY. Defining your desired personal brand is an important first step, but if it remains on a piece of paper in a drawer, it won't do you much good. In other words, no one's perceptions, thoughts or feelings about you will change unless and until you communicate the personal brand you really want.

So, keep your personal brand definition in mind as you go about the top five activities that all of us do every day. These activities best communicate what you stand for: your actions, reactions, look, sound and even your thoughts. The key to success is being consistent with these five activities – in what you say,

do and think – day-in and day-out.

Do you act like someone with your desired personal brand would act? Do you stop yourself before reacting negatively to situations that arise? Do you look and sound like someone with your desired personal brand? And, yes, do you think like someone with your desired personal brand?

Thoughts are incredibly powerful and can not only affect your own feelings but how others perceive, think and feel about you as well.

AVOID DAMAGING YOUR PERSONAL BRAND. After you have defined your personal brand and created a plan for communicating it, you also need to take special care to keep it intact. How do you do that? One way is to watch others and learn from their mistakes. Even if you don't know anyone personally who has damaged their personal brand, you have certainly heard of celebrities who have made serious blunders. For some of them, the damage has been so severe that their careers have never bounced back. So, pay attention to what others do that damages their personal brands, and avoid doing the same things.

BE AWARE OF YOUR OWN MISTAKES AND FIX THEM QUICKLY. If you do commit a personal brand blooper, do whatever is necessary to fix it. Apologize for it, show that you take responsibility for your errors, and go out of your way to correct them. This promotes a positive personal brand.

LEARN FROM YOUR ERRORS TO AVOID MAKING THEM AGAIN. When you realize your brand has taken a beating after a mistake, ask yourself: "What did I learn from this?" Write down the lessons and make a commitment to never make that mistake again.

KEEP A SENSE OF HUMOR. Most importantly, if you make a personal branding mistake, be willing to laugh at yourself. Everyone likes to work with someone who doesn't take themselves too seriously. **GCI**

Brenda Bence is a consultant and business coach based in Las Vegas.

Honing Personal Brand

“Personal branding” refers to distinguishing characteristics that gives something an easily, quickly recognizable image. Simply put, it’s what a business, product, service or even an individual stands for in terms of quality, dependability, security and niche. At a golf course, these characteristics allow you and your facility to thrive.

You always want your members, players, even staff and superiors to associate you with a positive, upbeat and successful experience. A loyal – particularly a brand-loyal – base should be the ultimate goal of successful personal branding. You can achieve this by establishing yourself as an authority or a leading expert in a particular profession, service or niche.

Some small-business industry experts argue that personal branding isn’t so much about being overly concerned with standing out from others, but melding all of your experiences through a period of time into one.

Personal branding isn’t based solely on a created perception. It encompasses total experiences into the creation of a final product or service.

Uniqueness and outstanding qualities occur naturally from there. It should inspire and, perhaps, empower you to examine what your colleagues and competitors are doing, and how you can stay a step ahead or add a different spin to your product. Consider these key points:

Make a conscious effort to listen to what the public says about your facility and the quality of play through word of mouth or random, simple surveys.

Include a uniqueness of product or a service-marketing niche. Promote the one-of-a-kind or you’ll-never-find-this-anywhere-else distinctiveness.

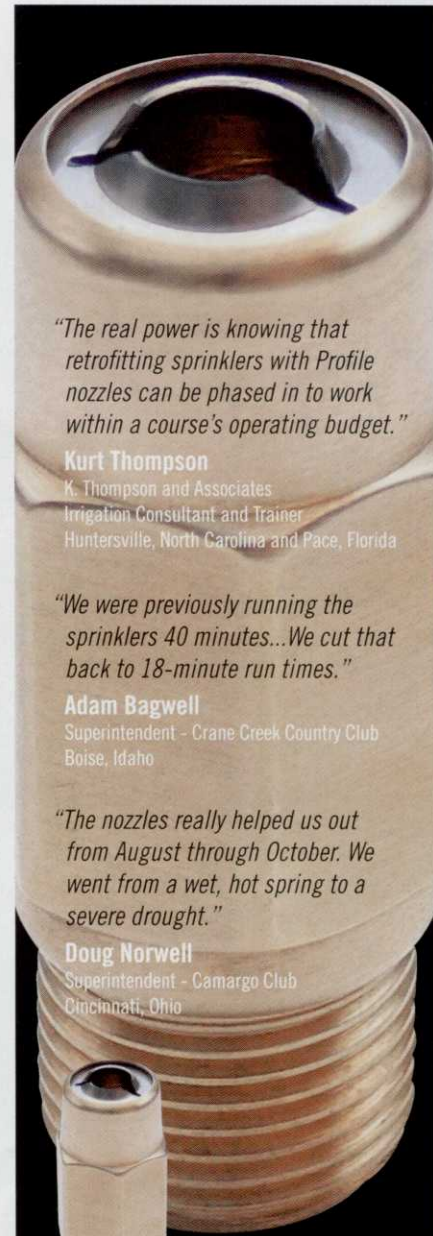
Promote and highlight your strengths.

Your personal brand should match the perception that people have of you and your services. Some

argue that we’re all branded from birth, and the overall perception people have of you as an individual also parlays into your business’ image. Some experts contend that there is a standard formula for branding that, if followed, will yield positive results. They are:

- *Define your values.* Since it’s common to become enmeshed in a corporate culture delegated by an employer, clarify your position as an entrepreneur.
- *Be original.* Personal brands are not created or invented; they’re experienced. Personal brands are defined by businesses that are willing to allow their talents to stand out without presenting themselves or products/services as phonies.
- *Become visible.* Marketing yourself and your company is the key element in promoting a personal brand. You can accomplish this by participating in panel discussions, teaching at a local college or writing regularly for a Web site or newspaper.
- *Establish and maintain relationships.* Personal relationships can and often do transcend into business relationships. Solid credentials and positive interactions with people will likely dictate the possibilities of long-standing relationships.

Ultimately, personal branding is synonymous with niche marketing. Major restaurants and some corporations have logos that automatically identify their organization with a particular service or product. As a small-business owner, you, too, can develop a logo and/or catchphrase that will quickly identify your company or brand to customers. – NFIB.com



“The real power is knowing that retrofitting sprinklers with Profile nozzles can be phased in to work within a course’s operating budget.”

Kurt Thompson
K. Thompson and Associates
Irrigation Consultant and Trainer
Huntersville, North Carolina and Pace, Florida

“We were previously running the sprinklers 40 minutes...We cut that back to 18-minute run times.”

Adam Bagwell
Superintendent - Crane Creek Country Club
Boise, Idaho

“The nozzles really helped us out from August through October. We went from a wet, hot spring to a severe drought.”

Doug Norwell
Superintendent - Camargo Club
Cincinnati, Ohio



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Poor distribution uniformity (DU), produces donuts, or dry patches or soggy greens. It's a common problem on courses with aging sprinkler systems.



Dealing with donuts

By Nancy Hardwick



Nearly exhausting his options to **combat donuts**, one superintendent swapped out irrigation heads to **improve distribution** uniformity on his golf course.

Assistant superintendent Dennis Eichner had enough donuts on his course to start a Krispy Kreme franchise. Working with his crew at the prestigious Silverado Resort in the Napa Valley, Eichner had exhausted his playbook.

Adjust heads, check.

Fine tune irrigation schedule, check.

Install new factory nozzles, check.

But the donuts wouldn't disappear. Time for a new strategy.

Silverado is among the most prestigious golfing venues in California's Wine Country. It features two 18-hole courses with more than 100,000 square feet of fairways. The property was recently purchased by golfing legend Johnny Miller and the course is undergoing major improvements to prepare for PGA tournaments. With this kind of attention, the Silverado staff had no tolerance for donuts or other distractions.

After isolating the problem to sketchy nozzle performance, Eichner had one more play to try. He had seen Profile stainless steel retrofit nozzles at the Golf Industry Show and spent some time with inventor David Malcolm. Eichner knew the nozzles had undergone testing at the Center for Irrigation Technology at California State University, Fresno, and was familiar with courses that had switched out plastic nozzles for the solid metal alternatives.

THE TEST: FAIRWAY NO. 16. The Silverado irrigation system has more than 3,500 Toro 830s and 835s, which were installed 10 years ago. Looking at Big Bad Fairway No. 16 and its dirt-dry donuts, Eichner decided to give the nozzles a try.

The set arrived, the crew switched out a couple heads and waited skeptically. Within a week, Eichner's test turned out to be a win-win-win for the course, the players and the crew. "The donuts disappeared and the improvements were visible to everyone," he says. "You could actually place your hand over the spray pattern and see the uniform coverage. It's like a fine, gentle rain."

Since Eichner's initial experiment in 2008, Silverado has embarked on an active retrofit program. More than 1,000 nozzles have been replaced, with the crew switching out 400 to 500 heads each spring.

"We concentrate on fairways and greens surrounds and have also switched out a couple roughs," he says. "The improvements are obvious and the greens committee has been impressed."

"We now budget the money each season for the switch-outs. This retrofit program has also extended the life of our Toro system while immediately improving course appearance and playability."

ADDRESS DISTRIBUTION UNIFORMITY. Poor distribution uniformity (DU), which produces donuts, dry patches or soggy greens, is a common problem on courses with aging sprinkler systems.

While superintendents can often identify the cause, most don't know



Top: Donut damage. Superintendent Dennis Eichner says you can place your hand over the stainless steel nozzle's spray pattern and see the uniform coverage.

there is a specific tool designed to resolve DU issues.

Irrigation industry consultant and trainer Kurt Thompson of K.Thompson and Associates in Huntersville, N.C., and Pace, Fla, has spent more than 20 years consulting with supers on issues related to water efficiency. He says most courses would benefit from individual nozzling to improve coverage.

"Where superintendents have retrofitted with (stainless steel) nozzles, there have been significant improvements on fairways, even with mounds and elevation changes," he says. "They are also effective on greens that are covered by two or more sprinklers and operated by one station. Metal nozzles are also useful anywhere there are varying soil conditions that require different amounts or rates of irrigation."

TEST SITES. Before being released to the golf market, the nozzles underwent two years of extensive testing, which was coordinated by the California Department of Water Resources and conducted at the Center for Irrigation Technology (CIT) at California State University in Fresno. Five representative courses were used as test sites.

Dr. David Zoldoske, director of the Center for Irrigation Technology, conducted the study entitled: "Improving Golf Course Irrigation Uniformity: A California Case Study." The CIT identified potential water savings through improved irrigation uniformity and focused on the simple and cost-effective method of retrofitting nozzles.

Data was collected one year prior to the nozzle change and one year of operation post-nozzle

change at each course.

Sprinkler audits were set up at each course measuring DU, the most common calculation for irrigation coverage. DU is the ratio of the dry or under-watered areas to the average applied within the sprinkler coverage area. DU above 80 percent is considered excellent and 55 percent or less is considered poor. The lower the DU, the longer the system must operate to provide the turf grass with the required water, wasting both water and energy.

CATCH CAN VALUES. Catch cans were systematically spread out over the coverage areas. The sprinklers were operated for a period of time with the amount of water collected and location of each catch can recorded. The catch can values were used to calculate uniformity.

One method to depict irrigation uniformity is a graphic densogram, a non-quantitative way to show the wet and dry spots within the sprinkler coverage area. Wetter areas (higher precipitation) are indicated by darker blue patterns and drier areas (lower precipitation) were indicated by lighter blue.

Densograms give an overview of how water is distributed in a repeating pattern between the sprinklers. It also indicates where the dry and wet spots are likely to show up on the fairways.

PLASTIC NOZZLES. Figure #1 shows the wet and dry areas within the sprinkler coverage (operating at 55 psi). The sprinkler heads were spaced on a 65-foot equilateral triangle and three green dots indicate the location of the heads. Using the original plastic nozzles, the driest point received only 57 percent of the average while the wettest point received 139 percent of the average.

METAL NOZZLES. Figure #2 shows the same irrigation system with Profile metal replacement nozzles

(also operating at 55 psi) in the same spacing of a 65-foot equilateral triangle. Three green dots again indicate the location of the sprinklers. The image shows a graphic view of the wet and dry areas within the coverage zone. Using Profile replacement nozzles, the driest point receives 70 percent of the average. The wettest 5 percent of the pattern area receives 128 percent of the average.

A higher uniformity rate (DU at 80 percent or above) is the goal of most golf courses, and translates into savings of applied water and energy.

The CIT tests concluded that the factory plastic nozzles delivered only 57 percent of the average in the driest area, while the metal replacement nozzles delivered 70 percent of the average in the driest area. In the wettest areas, the original plastic nozzles delivered 139 percent of the average, while the metal replacement nozzles delivered 128 percent of the average applied water.

WATER SAVINGS. In addition to improving DU and overall course appearance, Profile nozzles provided new opportunities for water and energy savings.

The estimated total gross water savings for all participating golf courses in the CIT study was 99.8 acre feet of water (32.5 million gallons) or 6.5 percent of the applied water. After reviewing all data and test results, the CIT concluded that the actual amount of total savings was 91.4 acre feet (29.8 million gallons) with an average savings of 6.1 percent per course of the applied water and energy.

Additionally, sprinklers that provide superior Distribution Uniformity at lower operating pressure reduce energy demands. As shown in Figure 2, excellent uniformity in irrigation distribution can be achieved while operating at the relatively low operating pressure of 55 psi (at the base of the sprinkler).

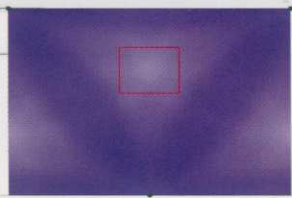


Figure 1. Diagram of the Sprinkler and Original Nozzle Application Uniformity



Figure 2. Diagram of the Sprinkler and Replacement Nozzle Application Uniformity

Top: Figure #1, wet areas with plastic heads. Figure #2, with stainless steel heads.

The CIT concluded that Rain Bird or Toro golf rotors retrofitted with Profile metal nozzles performed with consistently higher and measurable distribution uniformity, indicating greater efficiency while saving water, energy and maintenance.

Test results also showed that with water, energy and labor savings, the nozzles would pay for themselves within two years.

“The real power is knowing that retrofitting sprinklers with Profile nozzles can be phased in

to work within a course’s operating budget, rather than having to use capital improvement money,” Thompson says. “The course can even use their own personnel to do the work if they choose. The financial returns and overall course benefits present a real advantage to the superintendent who keeps Profile metal nozzles in his irrigation toolbox.” **GCI**

Nancy Hardwick is head of Hardwick Creative Services in Encinitas, Calif.

How they work

Manufactured by Underhill International of southern California, the Profile housings are constructed from solid brass and feature stainless steel nozzles engineered to provide uniform distribution and reduce wind drift.

Along with producing a main stream of water, the stainless steel insert has tiny notches pressed into the nozzle face, which strip away a small amount of water from the main stream, depositing it in close proximity to the sprinkler head. This produces the most uniform distribution of water possible, next to rainfall.

Primarily designed for golf courses, the metal nozzles operate reliably in sandy or rocky soil as well as in clay or loam, and are designed to resist clogging from dirty water. They are engineered to deliver a consistent, uniform application of water and reduce wind drift while providing long-range and close-in coverage.

The Profile Toro Series includes replacement nozzles for the: 730, 760, 860, 830, 834S, 835S, 670, 690, 750, 780, 854S and 855S. For Rain Bird heads, Profile retrofit nozzles are available for: Eagle 700, Eagle 900 and 51 and 91 brass impacts. Nozzles are color-coded for easy field ID.



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BY GREGORY E. BELL AND KYUNGJOON KOH

Nutrient and pesticide losses caused by simulated rainfall and sprinkler irrigation

Oklahoma State University researchers conducted field studies to measure both nutrient and pesticide runoff from plots receiving both sprinkler irrigation and simulated rainfall. Among the findings: pesticide and nutrient losses from simulated rainfall did not differ from runoff losses caused by sprinkler irrigation.

Research in crop production and turfgrass has identified grasslands, turfgrass stands and grass buffer strips as impediments to nutrient and pesticide transport in runoff (7, 12, 13, 27). Dense grass stands have unique characteristics that encourage water to infiltrate soil and impede and filter runoff (10, 19). However, research has also demonstrated the runoff-reduction characteristics that naturally occur in a dense turfgrass stand are not sufficient to prevent the substantial runoff caused by major storm events (2).

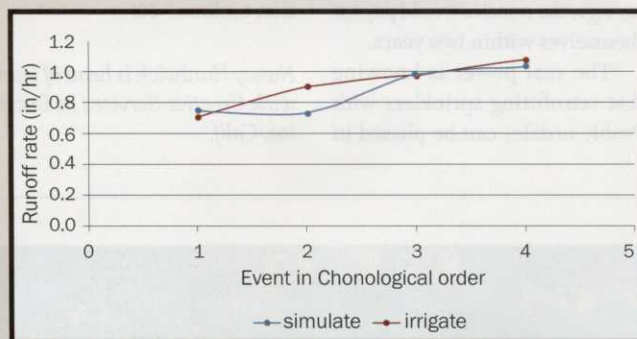
Urban turfgrasses are managed to provide relatively high aesthetic and functional value. Maintenance applications of fertilizers and pesticides required to satisfy consumer expectations followed by major storm events can result in unsatisfactory product transport to surface water features. Normally, surface runoff from turf has little environmental impact (6). However, because maintenance applications of nutrients and pesticides are required to maintain color and density at commercially or socially acceptable levels, there is a danger that some portion of a recent nutrient or pesticide application may

combine with surface water runoff and flow into adjacent water features.

NUTRIENT RUNOFF. An important environmental hazard caused by nutrient runoff is eutrophication (9). Low levels of nitrogen (N), mostly in the form of nitrate (NO_3^-), and dissolved reactive phosphorus (DRP), including H_2PO_4^- , HPO_4^{2-} and PO_4^{3-} , can cause algal blooms resulting in a loss of oxygen in surface water. Eutrophication is responsible for the “dead zones” in the Mississippi Delta and the Chesapeake Bay, as well as numerous lakes and other water features throughout the world. At least one state, Minnesota, has passed legislation that restricts the application of phosphorus fertilizer to turfgrass (22). Nitrate in surface water at concentrations as low as 1 ppm may lead to eutrophication (26). High NO_3 levels in drinking water are also a human health hazard. The Environmental Protection Agency has established a drinking water standard of 10 ppm for NO_3 -nitrogen (27).

Generally, about 99 percent of the phosphorus (P) in soils is unavailable for plant growth (3). Fertilizers are thus important as a source of plant-available

Figure 1.



P. Most inorganic fertilizers, however, are highly soluble, and if not properly applied, increase the risk of P loss to surface runoff (11). Dissolved reactive phosphorus can contribute to eutrophication at concentrations as low as 25 ppb (4) and is typically the limiting factor for eutrophication of surface water (23).

Nutrient transport in surface runoff is affected by rainfall or irrigation amount, intensity and duration of rainfall or irrigation, soil moisture, soil texture, slope, fertilizer application rate and fertilizer formulation (10).

PESTICIDE RUNOFF. Pesticide loss from turf depends on pesticide chemical properties, soil type, turf species, thatch, application timing and weather conditions

(10, 21). Pesticides may be transported to surface water through runoff or eroded sediment. Cohen et al. (6) analyzed water quality data from 18 studies on golf courses in the U.S. and one Canadian study. Thirty-one pesticide chemicals were detected in surface waters, nine exceeded maximum allowable concentrations for aquatic organisms, and five exceeded maximum contaminant levels for drinking water. The average concentration of the pesticides ranged from 0.07 to 6.8 ppb.

Transport of pesticides such as 2,4-D [(2,4-dichlorophenoxy) acetic acid], dicamba (3,6-dichloro-2-methylphenoxy-benzoic acid) and mecoprop [(*ffl*)-2-(4-chloro-2-methylphenoxy)-propanoic acid] in runoff from turfgrass