

# PlantHealthCare.com

JUNE/JULY 2000

ONLINE MAGAZINE

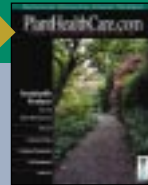
## Fertilization in the 21st Century

**Green  
Industry:  
Time to go on  
the Offensive?**

**The Biology of  
Pond Scum**

**NEW!**  
**Promote Bio  
to Boost Sales**

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# PlantHealthCare.com

ONLINE MAGAZINE

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By Felicia Gillham, Managing Editor

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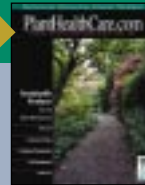
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# Fertilization in the 21st Century

By Bruce F. Shank, Editor

Have we forgotten a second benchmark in time as we celebrate the arrival of a new millennium? Farmers have completed ten millennia tilling the soil to grow plants for food, fiber and pleasure. Out of our ten-thousand-year agrarian lifespan, we have used synthetic chemicals for fertilizer for less than 100 years, or one percent.

For 99 percent of this time, we have depended on healthy soil to provide our crops with nutrients to grow. When a field's fertility was exhausted by overcultivating, we had to move to a different location where soil still had a natural balance of minerals, animals, and plants. Some say we have neglected our relationship with the finite amount of topsoil available to help us feed the rapidly growing population of earth.

Others believe we don't need soil at all; that hydroponics can produce all the food we need. As agriculture stands at the beginning of its eleventh millennia, we ought to look back and reconsider why farmers, nurserymen and gardeners once treated soil with respect.

## Decomposition and Nutrients

Decomposition in its simplest definition is a breakdown in chemical bonds

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## Fertilizing in the Future CONTINUED

between elements. Everything is made up of molecules of chemical elements. The things to remember about decomposition are its randomness and pace. Plants need only so much of any given nutrient at any time to grow. Too little decomposition and the plant will do poorly. Too much decomposition, and the plant also will perform poorly. The nature of certain soils makes them just right for growing crops, trees, or turf, because they contain the right elements in an environment that makes them available through decomposition in the right amount and at the right time.

Any soil scientist will tell you that a good soil not only contains needed elements, it must release them properly over time. Soils and the environment (oxygen, temperature, and water) control the speed of decomposition with beneficial organisms, buffering, electrical balance (cation exchange capacity), and acidity or alkalinity. The very process of organic matter decomposing in the soil can consume elements needed by plants, such as nitrogen.

Soil also needs good physical properties to permit moisture and gas exchange, drainage, and rooting. It isn't a homogenous entity, it is a collection of particles held together with moisture and sticky substances. These flocculates or aggregates make up the majority of the soil. When they break down, the characteristics that allow for good plant growth are damaged. Some fertilizers can cause soils to deflocculate. Particle size makes a big difference, especially with sand.

You can mix together all the chemicals required for plant growth in exact proportions and plants will fail because other natural characteristics are not properly addressed. These characteristics, when damaged by misuse of synthetic fertilizers, are hard to restore. It's much wiser to protect these beneficial characteristics in soil than to apply damaging amounts of expensive, quick-release fertilizers and then try to reconstruct a natural soil environment.

Of course, a blanket inference that all fertilizers are harmful to soil would be unscientific and untrue. Advances in slow-release technology, increased recognition of minor nutrients, and new types of application methods, such as subsurface injection and fertigation, have taken place in the last three decades.

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## Fertilizing in the Future CONTINUED

We have only just begun to rediscover the importance of organic components in soil and the reasons to preserve them. Ironically, natural components, when applied individually, don't always provide a quickly measurable response under field tests. We compare their response to products that are highly soluble, available in a wide range of pH, and are simple to uniformly incorporate into soil (topsoil anyway) because they are carried by water. We expect to reproduce conditions in the soil in weeks that took thousands of years for nature to create.

### Fertilizers: Food or Drug?

Common sense tells us that we might need to replace the elements that plants consume most. We have identified these as nitrogen, phosphorus and potassium. These three elements differ in their mobility in the soil, with nitrogen being the most likely to leach out of the root zone. But we shouldn't automatically conclude that these elements will always be deficient or that they are the only elements that might be deficient. Soils should be tested regularly and we should avoid applying excess or unneeded fertilizers. The elements could be in the soil but are not available due to reasons of pH, moisture, temperature, or low cation exchange capacity.

The emphasis in production agriculture is to grow a crop to its greatest yield or potential rapidly. For the first 10,000 years, we let the soil and weather determine that rate. Only in the past hundred years have we gotten hooked on the idea of making nature go a step further by stimulating plants. This fascination with speed and size has spread from agriculture and forestry to our landscapes.

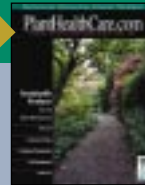
Nitrogen is the cocaine of horticulture. We are crazed by it and constantly assume that plants need more nitrogen than they actually do. When you stimulate a plant with nitrogen, you force it to seek the other nutrients to meet the artificially high metabolism and growth rates. You force growth, which invites problems with diseases, insects and winter hardiness.

Overuse of quick-release forms of nitrogen can create stress by causing an unnatural demand for soil nutrients. Some forms of nitrogen can also cause deflocculation of

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## Fertilizing in the Future CONTINUED

soil aggregates to complicate matters further. We knock the soil nutrient supply out of balance by supposedly “helping” the plant.

The goal of fertilization should be to supply nutrients at a level that satisfies the natural metabolism of plants. We should not be stimulating plants without a reason.

Organic fertilizers are slower than synthetic because they are more in line with natural plant metabolism, which is based largely on the genetics of the plant and the environment of the plant. By stepping into the equation with excessive amounts of nitrogen or water, we are throwing off the natural equilibrium of the plant’s growth.

Urea and ammoniacal nitrogen should be used in limited instances, such as renovation or installation of landscapes, not for maintenance. They were designed for agriculture, not for landscape and turf. That’s why chemists devised slower and longer lasting products such as urea formaldehyde, IBDU, methylene ureas, and sulfur- and plastic-coated urea. That’s why they chelated nutrients, to control release and provide storage of the nutrient in the soil.

It’s not unusual today for landscape and turf managers to use equal parts of nitrogen and potassium in fertilizers, largely because we overstimulate with too much nitrogen. We cause deficiencies in macronutrients, including phosphorus and calcium and micronutrients for the same reason, especially iron, sulfur, and magnesium. Consultants, after soil and tissue tests, are finding deficiencies in copper, zinc, manganese and even boron. Is this a soil problem or a people problem?

We know one thing: It is a new problem. We aren’t beginning to notice these things because we are smarter and have more sophisticated technology. We are noticing them because we are causing them. Nature had it covered; we are the one’s who have upset the apple cart.

We need to learn the difference between maintaining a plant’s natural growth rate and stimulating it. By knowing the difference, we can reduce the amount of nitrogen and water and consequently reduce the amount of complementary nutrients at the same time.

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## Fertilizing in the Future CONTINUED

Healthy soils already include bacteria, other microbes and organisms that produce enzymes making nutrients available. These constitute nature's built-in system of bringing equilibrium to the root zone. Nature has already devised its own system of preventing overstimulation called natural competition. It worked for ten millennia. Why don't we focus our efforts on correcting soils to this level of natural equilibrium?

That's not saying synthetic fertilizers aren't needed. We simply need to rethink the way we use them to eliminate overapplication. We need to consider the whole pie of possibilities in the soil, not just one slice. We should work with nature, not try to override it.

### Application Techniques

One important reason that slow-release fertilizers are needed is we have limited ourselves in the way we apply fertilizers to granules or sprays. Labor, cost, and convenience are the main reasons we have settled on these application methods.

There are other options, and professionals might want to take them more seriously. Foliar feeding can solve short-term nutrient deficiencies or provide needed stimulation during renovation without involving the soil. Injecting liquid formulations of slow-release nutrients below the soil surface has been proven valuable for stressed trees and ornamentals.

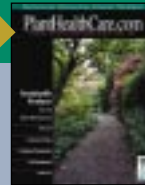
Golf course superintendents have achieved better control of nutrition on greens with careful fertigation or weekly liquid applications with boom sprayers. They establish a nutrient base with slow-release granular products and adjust for peak needs with "spoon feeding."

There is one big piece of the pie that remains to be addressed. The soil doesn't release every nutrient it contains. One of the benefits of a good soil, buffering, is tying up chemicals so they don't become available all at once. The other is storage. In many cases, we are applying fertilizers to soils that already contain them in storage. Rather than applying more, we should be focusing on the natural processes in the soil that cause the nutrients to be released.

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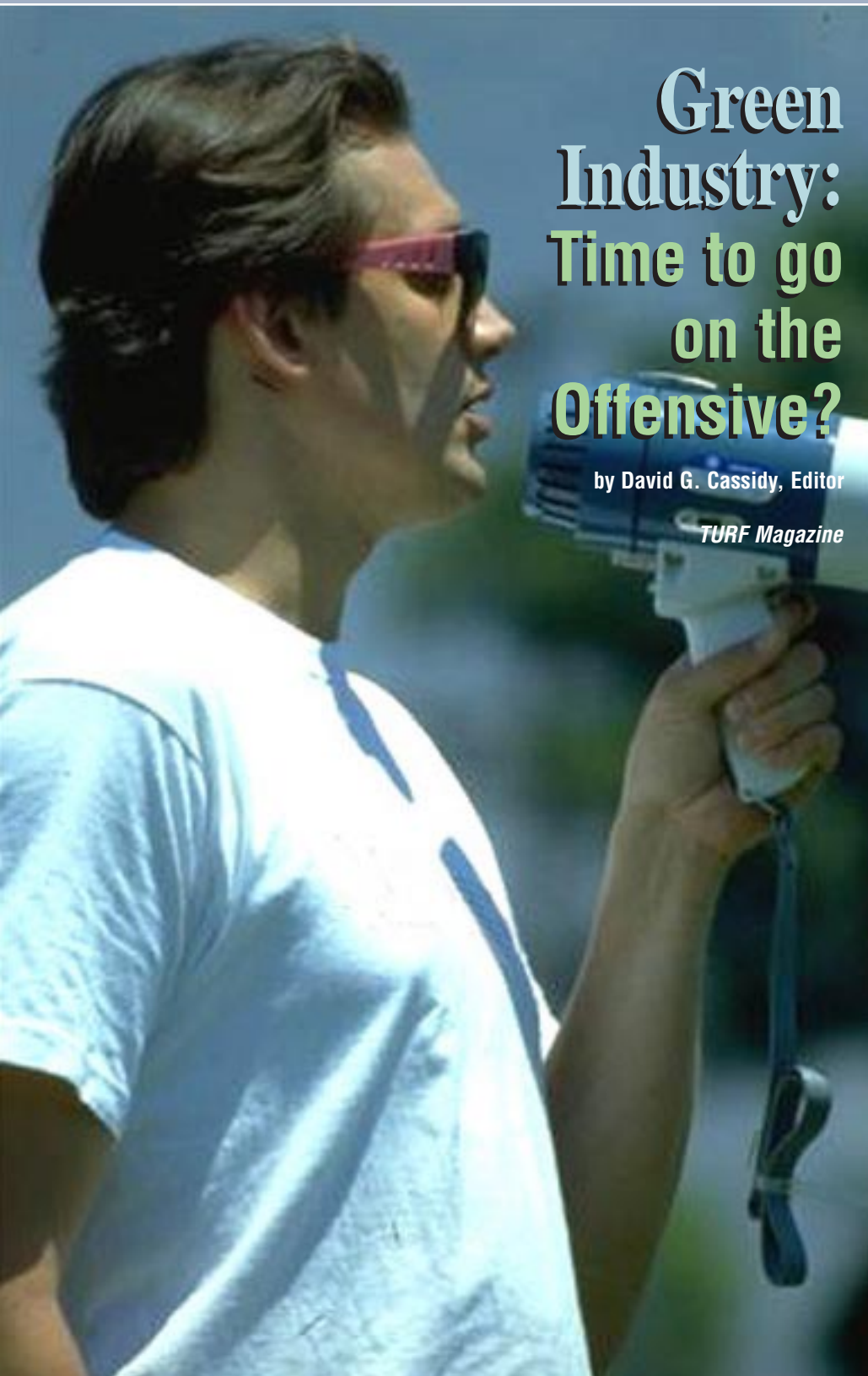
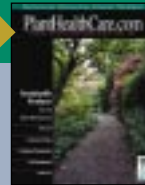
## Fertilizing in the Future CONTINUED

We spend millions of dollars irrigating, aerifying, and amending our soils. We try to improve the soil environment mechanically and chemically, but not biologically. This is the frontier of the 21st Century for all specialties in agriculture and horticulture. It is the piece that has been missing. Only in the last decade of the last century did biotech begin to impact our various landscape industries.

In the 21st Century, we can reduce the amount of nitrogen, phosphorus, and potassium we apply to soil without lowering our standards. We need to work on bringing natural, biological soil components into balance with synthetic solutions. We need to get out the mirror and look back in time to fully appreciate the first 10,000 years of farming on this earth. We need to devote more time and money to explore the missing piece of fertility—soil biology.

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## Green Industry: Time to go on the Offensive?

by David G. Cassidy, Editor

*TURF Magazine*

Any of us over the age of 35 or so grew up in a time when the use of chemicals to control pests or weeds in our landscapes was a simple matter. Cities and towns sprayed for mosquitoes, lawn care operators and homeowners treated their yards to make them green, and golf course superintendents avoided problems by regular applications of control products.

Unfortunately, we knew little about groundwater run off and concentration of substances within the food chain back then. Sure enough, all that DDT finally found its way into the egg shells of bald eagles. Lots of organophosphates (as well as lots of other junk) ended up in water supplies. Equally problematic was the ammunition given to the fledgling militant conservationists, who have used these early issues as a way to paint any company with even the slightest connection to using or managing environmental resources with the broadest and dirtiest brush possible. With the willing participation of the mass media, the militant environmental movement has become the voice of reason to the average citizen. Science has taken a back seat to sensationalism and slogans.

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## Cassidy Says: “Get Proactive” CONTINUED

The fact is that what we collectively call “the green industry” has done much to improve the lives of people all over the world. Next time someone doubts that statement, ask them how they like bubonic plague, fire ants and cockroaches? How about malaria? How about annual floods and other problems of erosion? Would they prefer stunted and sickly trees in their urban parks? Is there a farmer alive who would prefer to go back to using the power of a horse instead of horsepower? Isn't it about time the green industry stopped acting like we have done something wrong? Isn't it time for all of us to stand up and correct the mistakes of the uninformed mass media, funding-driven environmentalists and voter-placating politicians? Unless we in the green industry open our mouths, the environmentalists voices are the ones that will be heard. If we do not get proactive about correcting erroneous news stories—if we do not make it our business to let politicians know when they have been influenced by emotion and well-funded special interest groups and ignored the science of a particular issue—we will have no one to blame when the current growth in our industry reverses.

### Ya' Want Examples?

Anyone remember the apple scare of a few years ago? News stories, congressional hearings with the appropriate big name, Hollywood celebs giving testimony (though, it amazes me how our politicians seem to think an actress who has played the part of a farmer's wife in some B-movie is now qualified to speak as an authority on farm issues, but I digress), special reports and the like were all over the news for several weeks. “Stop feeding apples to your kids! They're covered with poison!”

How about licking golf balls? Remember that one? Golfers were supposed to be falling over like bugs caught in a zapper on a hot summer night, all because of the habit of licking a spot or two off of a golf ball.

I can recall a few stories about how golf course superintendents were supposed to be dying young due to their increased exposure to toxic substances.

Not all of the stories are from the chemical side of the green industry, either. How much time and money has gone into the leaf blower noise issue? All of that started *(continued)*



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## Cassidy Says: “Get Proactive” CONTINUED

because some out-of-work TV actor in Beverly Hills didn’t like hearing his neighbor’s leaf blower.

Of course, some of the best examples are from outside the green industry. Who can forget such oldies but goodies as: Cell phones cause brain cancer; your dental fillings are poisoning you; silicone breast implants cause joint diseases; Aspartame sweetener is harmful; St. John’s Wort will help your memory.

The one thing all of these stories have in common is that they are all total nonsense. All of them were reported in varying degrees of sensationalism by our national media, and when the science was presented that proved there was no basis in fact to the stories, they all died a quick death. Unfortunately, the truth does not get as widely reported as the initial story. When this happens over dental fillings or some herbal concoction, little harm is done (though, over-doing it with the St. John’s Wort could put you in the hospital). When the media lies about the green industry (or any other industry, for that matter), it can cost jobs and millions of dollars.

### Waiting in the Wings

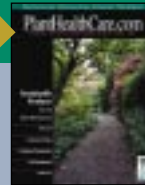
If you are thinking, “So what? We work in the environmentally friendly side of the green industry” or “We manage our turf and ornamentals with all biologicals and beneficial bacteria products” you really ought to think again. The next big battle is coming down your street.

Biological and genetic engineering will be the next big environmental battlefield. The fight has already been fought in most of Europe, and guess what? Science lost. Slogans, emotions and scare tactics won. Now the battle is moving to the U.S. and the environmental giant, Greenpeace, is amassing a war chest that will make what they spent to fight against commercial whaling look like pocket change.

Never mind that biologically engineered products can be an effective way of cutting or eliminating use of other, more dangerous chemicals. Never mind that humans have been genetically engineering organisms for thousands of years. (You think a Kentucky Derby-winning race horse just happens? Does anyone believe that cows evolved on

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## Cassidy Says: “Get Proactive” CONTINUED

their own to give the cuts of meat humans like best? Do fruits and vegetables grow naturally shiny, sweet and perfect?) Try to forget that people in the more arid parts of the world might benefit from grains that could grow in their climates. Greenpeace (and surely other, less notable groups to follow) is not interested in the science of this issue. They are interested in getting on the next big, environmental bandwagon. That is where the money is. Call me cynical, but I predict the national media will be only too happy to oblige them with OJ-like coverage.

### Who’s to Blame?

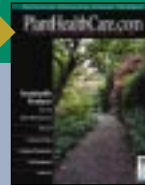
I have participated in numerous conversations where the latest television interview between an “earnest and caring” yet oh, so finely coifed news mannequin and some professional environmental protester is mocked and ridiculed by those of us who know better. The professional protester makes some wild claim that is not even remotely backed-up by a shred of scientific evidence, and the TV info-droid looks serious, shakes his or her head in agreement, and now it’s time for a look at the weather. There was a time in American journalism when the claims of an interviewee were corroborated. Unfortunately for those of us who appreciate a few facts with our evening news, this no longer seems to be the case.

So we sit around and bemoan the state of the journalistic profession. We laugh at the inanity of the professional protester. We feel intellectually superior because we know the science behind the issue does not back the claims of the militant environmentalist. And then, guess what? Millions of TV viewers accept the words of the protester as fact. (Hey, if it’s on TV it must be true, right?)

These same TV viewers take these “facts” into the voting booth with them and make choices based on these “facts.” Politicians take a poll and find out that their constituents are concerned about some non-existent or, at best, overly hyped environmental threat and use the same “facts” to propose restrictive legislation which become ill-conceived laws. Remember, these laws are not based on science, they are based on the emotions and agenda of a professional protester, funneled through the “always looking for a scandal” news media, believed by the science

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## Cassidy Says: “Get Proactive” CONTINUED

education-deprived American voter and enacted by a group of anything-to-get-elected politicians.

So, do we blame the lying protester or the news media? Do we hold the voter responsible (and the public school system that left them so scientifically ignorant that they are open to believe whoever shouts last and loudest) or the politician?

Or, does the blame lie right in our own laps?

### Time for Facts to Rule

I say it is time for the green industry to stand up and fight back. We have the science on our side, all we have to do is figure out how to get the message out. We need to figure out a way to get the truth to the average American voter.

When the next enviro-myth is hyped in the media as fact, it is up to us to correct the error. It is up to us to call and/or write to the network or station and explain the science behind the hype, and to offer a reasoned and accurate view to counter that hype. Instead of taking it on the chin and acting like we have something to hide, we ought to stand up as an industry and remind people, “Hey, life is a lot more pleasant around here because of what we do.”

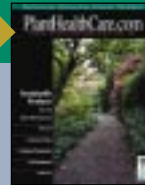
The facts are that this industry has led the way in environmental reforms and research. Sure, like almost all other areas of modern endeavor, there was a time—before anyone knew any better—when we produced products and acted in ways that were harmful to the environment and to ourselves. Chemicals were spread with little regard to their environmental impact and eco-systems were destroyed by insensitive construction practices.

Since that time, the green industry has led the way in developing environmentally sound products and practices. The old story of a golf course being an environmental wasteland, controlled by massive infusions of harmful chemicals is no more. In many areas, the local golf course is the most environmentally natural greenspace for miles around.

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## Cassidy Says: “Get Proactive” CONTINUED

Not just golf course superintendents, but many other turf managers are using biological products to fertilize, fight disease and control insects. Spot applications and Integrated Pest Management practices are so common now as to be the norm.

One of the facts that professional enviro-protesters like to ignore is that the world is a healthier place with most of the substances and practices they fight against. Don't want all of those pesticides? Great. Just tell me what you'd like to do with the pests. Don't like biologically engineered insecticides? OK, just let me know what you'd like to do with the millions of people worldwide who will get sick and die from insect-borne diseases. Want to ban research into genetically engineered crops? Okey-dokey—just explain to all of the hungry people in the world why crop production is down 40 percent and why their food is full of bugs and blemishes.

There are reasons why life expectancy is about 30 years longer now than it was not so many generations ago. One of the reasons is that the pests and diseases that used to kill us are controlled by products produced by this industry. It's about time the voting public knew that.

*The viewpoint voiced by the guest columnist reflects solely the viewpoint of the writer. It may or may not be representative of the beliefs of Plant Health Care, Inc., its employees, investors or others related to the company. The guest column is included in the PlantHealthCare.com Online Magazine to prompt discussions. Responses, which may be posted, are encouraged. See response options below.*

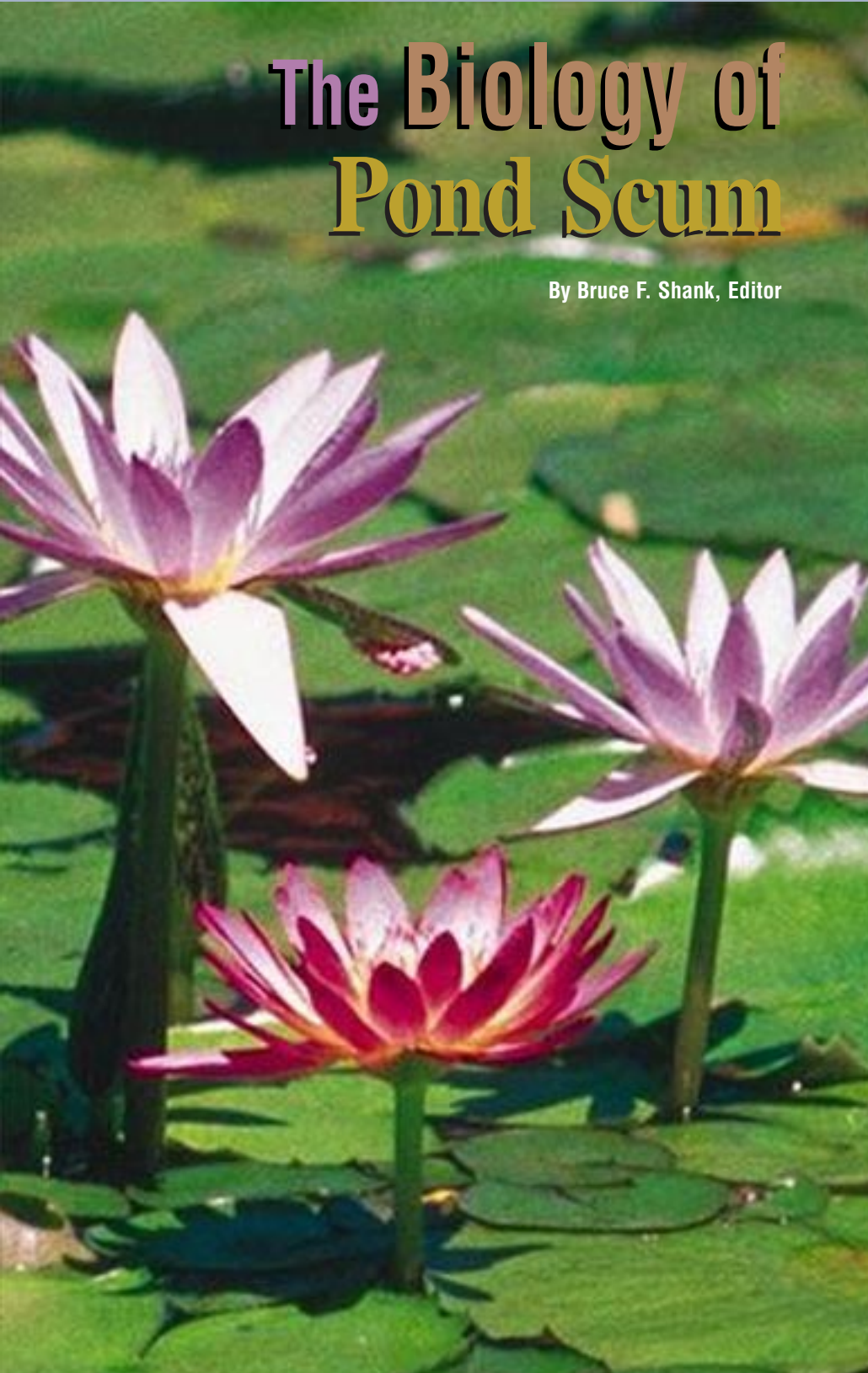
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# The Biology of Pond Scum

By Bruce F. Shank, Editor



Scum is not an endearing word. Only limnologists really appreciate the richness of its meaning. Even they tend to use it generally to refer to filamentous algae, which is far too narrow for biological accuracy.

Like the human body, ponds and lakes are a combination of organs working together. Henry David Thoreau used Walden Pond to symbolize the state of mankind in his writing. He wasn't far off. In fact, humans and lakes are linked ever closer together as our population exceeds the earth's supply of fresh water.

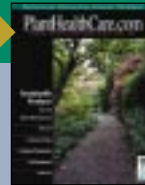
While humans use water for many things, millions of organisms depend on it as all or part of their universe. The food chain of the aquatic world starts with microscopic plants. While we generally look for larger and larger organisms as we go up the food chain, perhaps the most critical components of lakes and ponds are the equally tiny microbes and bacteria that are pivotal to lake equilibrium.

## Nature's Competitive Imbalance

The most important battle in lake management takes place at a level we can  
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## Scum: A Symptom of Imbalance CONTINUED

barely see with the naked eye, until an algae bloom takes place. Within days, conditions can explode the population of algae and lead to serious aesthetic, odor, and fish kill problems. Understanding the battle of micro-aquatics is essential to resolving our own personal Walden Ponds.

Ponds and lakes are naturally imbalanced. If left alone, all lakes will become fields over time. This is one of the oddities of ecology, that nature would fail to preserve the beauty and utility of the planet's supply of aquatic habitat and fresh water for mammals. Man's interference speeds this process by causing sediment, nutrients, organic load and contaminants to increase to a level that natural digesters, such as bacteria, can't match. We speed up the conversion of lakes to swamps and then fields by our actions.

We might have the wrong opinion of bacteria because of the press coverage given to beach and lake pollution caused by contamination from storm sewers and treatment plants brought about by floods or broken sewage pipes. The popularly understood goal of water treatment is to remove "harmful" bacteria, such as coliforms, from our drinking water. In fact, these particular bacteria can be indicators of other organisms that can result in diseases, such as dysentery, hepatitis, typhoid fever, and cholera. Unfortunately, our methods of controlling coliforms and related diseases also can kill beneficial bacteria.

Water treatment officials in the United States have identified 30 contaminants in water that are threats to human health. Many of them are metals, fertilizers and pesticides. Bacteria and viruses are just two of many other concerns.

The things that cause lakes to become fields are plants, sediment, and wind-blown plant or animal debris. These things lead to shallower, poorly circulating and poorly aerated lakes. Lake degradation accelerates as depth is lost. It is at this interim phase that severe problems like algae blooms, bad odors, and "scum" occur.

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## Scum: A Symptom of Imbalance CONTINUED

Restoring depth, circulation and aeration can reverse or slow the degradation process. Preventive measures, including watershed management, reduce the nutrient input to lakes. But the front line of the battle remains in maintaining a balance between plant growth and the ability of beneficial bacteria to break down organic waste from dead plants and fish. Man can help provide a certain degree of equilibrium by what's known as bio-augmentation. The addition of beneficial bacteria to compete with algae is a more direct approach to fighting pond scum and should not be overlooked when mechanical and other methods of lake management are used.

### Components of Scum

Algae are present in virtually any body of water. Three general types are recognized. They are in order of size (small to large) planktonic, filamentous and attached-erect algae (*chara* and *nitella*).

Both filamentous and attached-erect algae begin growing on the bottom and shores of lakes. Filamentous algae are often noticed as a slimy green coating on rocks and docks. You will probably only see *chara* and *nitella* in the shallows. They resemble advanced plants with tiny stems and branches.

Filamentous, however, can become buoyant, break away from the bottom, and rise to float in mats on the surface. These mats are where the term scum originates.

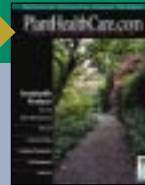
Planktonic algae are microscopic plants that live suspended in the upper few feet of water. They are easier to control than filamentous, but can add significantly to bloom conditions.

When water temperature, sunlight and nutrient (phosphorus and nitrogen) content reach optimum levels for algae, they can grow rapidly to a point where they exceed the ability of the aerobic bacteria and microbes to decompose them. This can lead to a depletion of dissolved oxygen in a lake, which in turn favors odor-generating anaerobic bacteria.

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## Scum: A Symptom of Imbalance CONTINUED

Copper is phytotoxic to algae. Products using copper will kill algae. Once algae dies, it becomes part of the nutrient load in the lake. It is reasonable to use copper when unusual weather conditions favor algae growth in your area. However, no chemical should be used as a substitute for proper construction, circulation, aeration and microbial health.

Nutrient levels can be controlled to an extent by watershed management and treatment with aluminum sulfate, ferric sulfate, or lake clarifiers. Temperature can be assisted by mechanical circulation to mix the three layers common to lakes. Cooler temperature layers at the bottom and middle of the lake need to be constantly mixed with the warmer surface layer during warm periods.

Once decomposing material that was suspended in water eventually falls to the bottom, the job is only half done. There are two approaches you can take. One is to bring in reinforcements of aerobic bacteria. The other is to remove some of the load with filters fed by intakes on the bottom or submersed beneath the surface. Material that is not physically removed or digested by aerobic bacteria will cause an increase in anaerobic bacteria. When you can detect a smell of sulfur near a lake, decomposition conditions are beyond the aerobic bacterial capacity of the lake.

If you choose to add beneficial bacteria, you should avoid applications of synthetic herbicides or chlorine. The best time to control aquatic plants is in the spring or fall so you can address algae and related scum head-on during the summer.

Circulation and aeration will help distribution of bacteria, oxygen and cooler water. Dyes will not harm bacteria and can shade out submerged aquatic plants to discourage their growth and to reduce the amount of dying vegetation in the lake.

Ozone injection has been tried by some lake managers and is used by many water treatment agencies in their holding ponds. Of course, one of the missions of water treatment is to kill bacteria and ozone can do that. In a sense, you are trying to replace

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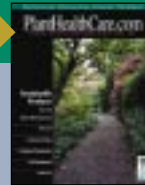
## Scum: A Symptom of Imbalance CONTINUED

the job done by bacteria and thus become dependent solely on that method as bacteria levels drop.

Scum is a sign of an unhealthy pond. But is also a part of nature. If you don't want a lake to become a field, you need to intervene. Nature can assist you if you know what you are doing.

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# Promote Bio to Boost Sales

by Felicia Gillham, Managing Editor

“Customers  
must  
understand  
what they are  
buying.”

I’ll share a secret with you. For more than 20 years as a public relations counselor, I have been hired by mega corporations, mid-sized businesses and small, emerging enterprises for my expertise in promoting companies and their products. My success has been dependent on one primary belief: The best way to promote is to educate.

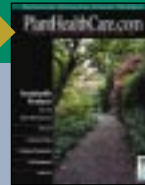
In recent years, biological approaches have entered the marketplace. As an industry, horticultural professionals have struggled with the questions of efficacy, cost and how to fit more natural approaches into their own operations. I’ve watched and wondered when “bio” would be seen for what it really represents—a tremendous opportunity to boost sales through the education of our customers.

Each year we spend huge sums of money to make potential customers aware of our businesses. These sales leads are critical, I agree. But before a customer commits to a purchase decision, that customer must also “understand” what they are buying. And there is no greater tool to create understanding than public relations, which under my hypothesis boils down to education.

*(continued)*



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“Educated  
customers  
know there are  
professionals  
that can help.”

## Use Your Expertise CONTINUED

### The Bio Sales Opportunity

To educate, you need a topic. The marketing manuals state that you need to create a message. Can you imagine a better message than bio approaches? The use of biologically based materials enrich the environment, they do not harm it. The materials are safe to humans, wildlife and beneficial organisms. Bioproducts can be applied without moon suits.

Bio approaches represent a change from traditional practices, so they are new and still relatively unknown. Best of all, bio is the perfect bridge to teach customers about plant health. To understand how a biological product works, you must learn about how plants grow.

There are some who believe that an educated customer is a lost customer. Once a client learns more about how to care for their own landscape, there's little reason that they need you and your company to perform the work for them. I'm going to step out on a limb and say that's pure "bunk," safe in the knowledge that my limb will not break.

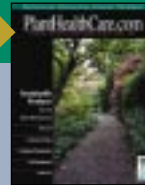
The more customers learn about plant health, the more they become concerned about the sustainability of their plants. Think about it. Clients with little knowledge about plants believe that plant health is based on water. It is based on experience that they gain with house plants. The plant wilts, it must need water. The plant gets white fuzzy objects on it. It must need water. The plant turns brown, it must need water. When they learn about diseases, pests, fertility, varieties, regional differences, etc., the educated customer begins to look for problems. The educated customer knows when a plant is in trouble and when the situation has risen beyond their own capabilities. Most important, an educated customer knows there are professionals that can help and they are just a phone call away.

Teaching customers about plant health is the overall objective. Teaching them about biological approaches is your "hook," the new twist on an old theme that can catch

*(continued)*



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“Customers  
always want  
to buy from  
leaders.”

## Use Your Expertise CONTINUED

their interest. And that interest is alive and well, thank you. The evidence is in the success of gardening and landscape magazines geared toward the non-professional. Interest in science also abounds. Discover magazine has 1.2 million subscribers, and a growing number of Scientific American’s 700,000 readers are laymen, not scientists.

### You Are the Expert

A truism in public relations is that expertise implies leadership, and customers always want to buy from leaders.

As a Green Industry professional, you are an expert in the planting, care and maintenance of landscapes, golf courses, nurseries, etc. People or businesses entrust their property to you because of your expertise. It is something you already have, so maximize it. Share your knowledge.

Home Depot has been highly successful in sharing the knowledge of its employees. The corporation’s investment in salary and benefits has already been made once the employee is hired. It maximizes its dollars by having the employees teach seminars about putting in new tile, planting a garden in a pot, or installing a new bathroom.

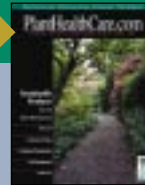
Here are just a few venues for teaching that you can incorporate in your own business:

**Hold seminars.** Invite your current customers (this encourages repeat business), as well as potential customers. A classroom isn’t needed. In fact, teach in a real-world setting. Meet at a location where you have recently begun a project. Teach your pupils and guide them as they help finish the job for you. As your added enticement for their participation, make sure the job incorporates bio approaches. Have the products available. Explain how they work, and have the pupils help apply them.

You might sense a problem here. How do the pupils, your potential customers, see the benefits of what you teach? If you use [mycorrhizal fungi](#), [beneficial bacteria](#) and biostimulants, their overall effect or benefits may not be seen for a month or more. The solution is simple. Keep a list of all pupils and the site they helped prepare.

*(continued)*





“There is great interest in bio approaches as a speech topic.”

## Use Your Expertise CONTINUED

Periodically survey the site and send followup letters or notices about the site’s progress. Your letters will reinforce the pupils’ experiences, and keep your company’s name in their memory banks.

**Become a speaker.** Garden clubs, schools and libraries are all excellent venues for giving talks, and I can assure you that there is great interest in bio approaches as a speech topic. If you doubt your own abilities to give a speech, assign someone from your company who is comfortable doing so. The best talks are interactive. Ask the club president to notify the attendees to bring in questions and samples from their own yards. Be sure to bring in your own plant and product samples to pass around.

Be prepared to receive questions you can’t answer. We’ve all been faced with a plant sample that is too strange to identify. If you have the contact information available for your local cooperative extension office, it can save you some embarrassing moments. Finally, be sure to pass around a sign-up sheet that requests address information. Then, again, follow up periodically with your new crop of potential customers.

**Put out a newsletter.** Make your expertise available to a wider range of potential customers via the mail. A newsletter is a good solution, and it needn’t be expensive beyond your cost of postage. Keep it simple. Make it a single page, but make the information sufficiently in-depth to convey your expertise on the subject.

Make bio approaches the theme of your newsletters. This will help make your effort rise above all the “clutter” that customers receive in their mailboxes. Then explain biological information in ways that will involve your customers. For example, in each newsletter, provide an assessment form. Direct the customer to dig a hand full of soil from the ground and examine it. On your form, allow the customer to determine their type of soil—clay, loam, sand, etc. Explain what life forms may be found in that soil and what roles they perform. In another newsletter issue, encourage your customer to carefully dig up a plant to examine its roots. Explain the form and function of roots, while also discussing the mycorrhizal fungi that has colonized the plant.

*(continued)*





“People love to recommend the companies they do business with.”

## Use Your Expertise CONTINUED

Make your newsletter pay off by including “tips” in each issue. The tips should inform the customer about tasks they should perform on their own in the landscape. And, you should include tips on landscape situations that are better suited for you to complete for them.

### You Add the Value

People love to recommend the companies they do business with. For proof of this, just listen closely to conversations at your next gathering. “Oh, I have a great beautician.” “You must go see my doctor,” and “yeah, I found a guy that can fine-tune any engine to perfection.” If you question these people further, you will often find that there is a value-added element to many of these providers that keep their customers talking. The doctor may have a great selection of *People* magazines, or may simply use a warm stethoscope.

Where can you provide added value? Virtually anywhere, because you already have it—it’s your expertise. Every time you deal with a customer make sure they have learned something from you about their own plants and property. I understand time is money. However, if you add fifteen minutes to every service call and spend that time with the customer, one-on-one, making the rounds of their property, you will recoup your time spent in increased business. It’s virtually guaranteed.

Spread your expertise through every aspect of your business. A tree care firm in the upper Midwest records information about plant health. When a customer calls the company and is put on hold, they are treated to advice about tree tasks that should be performed linked to the time of the year the call is placed. Why let a customer wait on the line with only dead air?

Associations, particularly the [International Society of Arboriculture](#), has a wealth of handouts available that can be left with customers or mailed out periodically from your company. When your company sends out its bills, do you also place a brochure or newsletter in it? If not, you may be missing an opportunity.

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“Spread your expertise through every aspect of your business.”

## Use Your Expertise CONTINUED

Consider photocopying instruction sheets on the care and maintenance of the plant varieties you put into a landscape and provide them to the customer. Be sure to include the symptoms that would trigger the need to call you.

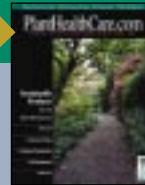
The variety and ways to extend your expertise—to educate—is limited only by you. You, yourself, have probably considered many of the ideas I’ve put forth. What can move you to action is the “hook.” Rethink your ideas under the theme of bio approaches. Is your office located in a spot that allows space for a biologically based garden? Wouldn’t you attract more traffic at your booth at the fair if your signage was emblazoned with “Learn about Biological Plant Care Here”? And your local radio garden show will certainly show more interest in having you as a guest if you can discuss breakthroughs in bio approaches.

Remember. You are the expert. Use that expertise to educate. Your customers will thank you with added business.

*Note: Plant Health Care, Inc., the publisher of this magazine, is considering developing a series of slide shows and overhead transparencies about biological technologies to assist professionals who give speeches. Preparation of this series is dependent upon your interest. Please let us know if this series of educational tools would be of interest to you by emailing us. [Click here](#)*

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# PlantHealthCare.com

ONLINE MAGAZINE

## About Planthealthcare.com Online Magazine

PlantHealthCare.com Online Magazine is posted at [www.planthealthcare.com](http://www.planthealthcare.com) for professionals who produce, design and maintain plant material in the arbor, landscape architecture/design, landscape maintenance, nursery/greenhouse, and parks and recreation industries. Published as an educational service by Plant Health Care, Inc., the PlantHealthCare.com Online Magazine is designed to engage, educate and inform professionals about new technologies that promote the health of plants, specifically those that create “sustainable” landscapes that cost less, provide more value and last longer. The magazine also seeks to open discussion about issues that impact the many businesses that serve the plant health industry.

### ■ [About Our Copyrights](#)



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ONLINE MAGAZINE

## Meet Your Editors

### Bruce F. Shank Editor

Bruce Shank is owner of BioCOM, a horticultural communications company based in Palmdale, CA. He is the editor of *Irrigation Business & Technology*, managing editor of *TurfGrass Trends*, and former editor of *Landscape & Irrigation*, *Landscape Management* and *sportsTURF* magazines. He was graduated by the University of Missouri—Columbia with a degree in agricultural journalism in 1973. He is a past president of the American Society of Business Press Editors and a member of the Turf & Ornamental Communicators Association.

■ [Send an e-mail message to Bruce Shank](#)

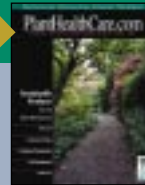
### Felicia L. Gillham Managing Editor

Felicia Gillham is owner of Gillham & Associates Marketing Communications, a San Diego, CA firm she established in 1989 to service the needs of turf and ornamental, agricultural and biotechnology companies. Articles written by Gillham on behalf of her clients have appeared in more than 100 Green Industry and farm trade publications. She is a 1980 graduate of the University of Missouri—Columbia with a degree in agricultural journalism. Gillham is a member of the Turf & Ornamental Communicators Association, American Agricultural Editor's Association and the National Association of Farm Broadcasters.

■ [Send an e-mail message to Felicia Gillham](#)



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## Meet Your Editors

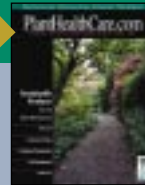
David G. Cassidy  
Guest Columnist

David G. Cassidy is editor of *TURF Magazine*, a leading national publication that covers the entire green industry through regionalized issues.

■ [Send an e-mail message to David Cassidy](#)



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## Tool Kit

Welcome to the PlantHealthCare.com Online Magazine Tool Kit. On this page, you'll find free software and other helpful web tools that your editors and other readers have found helpful or just-plain fun. A word of caution, however. Download at your own risk. If you should have problems, contact the manufacturer for technical help.

■ Acrobat Reader (Free Download)

Allows you to view pages across different computer platforms.

■ Shockwave and Flash Player

Lets you experience animation and entertainment in your web browser.

■ Internet Explorer 5.01

The newest version of the Internet Explorer browser with 56-bit encryption.

■ SoftSeek

A source for shareware, freeware and evaluation software.

■ SOUNDamerica

A collection of sound files for your listening pleasure. For entertainment only.

■ EntryPoint

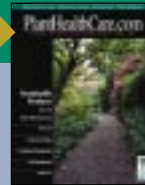
Consumer shopping utility and Internet news and information service.

■ WebFerret

A fast, powerful search utility.



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## Calendar of Industry Events

June

5

The New Jersey Landscape Contractors Association General Membership Meeting, Washington Township, NJ (201) 703-3600.

12-13

Integrated Pest Management Conference, San Luis Obispo, CA (805) 756-2830.

14

Scouting for Pests and Problems of Woody Ornamentals in the Landscape, Pittsfield, MA. (413) 545-0895

15-16

Warm-Season Turfgrass Research Tour, Maricopa, AZ. (520) 783-2050.

21

University of Massachusetts Turf Research Field Day, South Deerfield. (413) 545-3066.

21

Scouting for Pests and Problems of Woody Ornamentals in the Landscape, Pittsfield, MA. (413) 545-0895

22-23

Northeast Shade Tree's "Tree Autopsy and Dissection Lab," Portsmouth, NH (603) 436-4804.

22-25

Outdoor Power Equipment Institute Annual Meeting, Napa, CA (703) 549-7600.

26-29

Southern Forest Nursery Association's Conference, "Growing Green in the New Millenium," Mobile, AL (334) 898-7013.





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## Calendar of Industry Events

CONTINUED

July

7-8

Tennessee Nurserymen's Association Trade Show, Nashville, TN (615) 476-3951.

11-16

American Nursery and Landscape Association Annual Convention, British Columbia, Canada. (202) 789-2900.

12

Ohio Lawn Care Association Summer Diagnostic Seminar, Columbus, OH. (800) 510-5296.

13-16

American Landscape Contractors Association Summer Leadership Meeting, San Diego, CA. (800) 395-2522.

18-21

Turfgrass Producers International Summer Convention & Field Days, Spokane, WA. (800) 405-8873.

22-24

International Lawn, Garden and Power Equipment Expo, Louisville, KY. (800) 558-8767.

24-25

Professional Lawn Care Association of America Legislative Day on the Hill, Washington, DC. (800) 458-3466.

25

Midwest Regional Turf Field Day, West Lafayette, IN. (765) 494-8039.

25-27

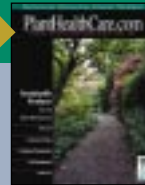
Pennsylvania Allied Nursery Trade Show, Fort Washington, PA. (610) 544-5775.

26

Massachusetts Nursery and Landscape Association Summer Meeting, Boylston. (413) 369-4731.



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## Calendar of Industry Events

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### July, continued

31

Kansas and Missouri Joint Landscape and Nursery Summer Meeting and Trade Show, Kansas City, MO. (816) 233-1481.

### August

4-6

Southern Nurseryman's Association Conference and Trade Show, Atlanta, GA. (770) 953-3311.

6-9

International Society of Arboriculture, Baltimore, MD.

8-9

Iowa and Nebraska Nursery & Landscape Association Joint Field Day, Shenandoah, IA. (816) 233-1481

9

New England Nursery Association Summer Meeting, Biddeford, ME. (508) 653-3112.

14-18

Florida Turfgrass Association Annual Conference, Gainesville, FL. (800) 882-6721.

15

Cornell University Field Day, Ithaca, NY. (607) 255-1792.

18-19

North Carolina Association of Nurserymen Show, Charlotte, SC. (919) 266-3322.

18-21

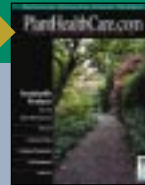
Texas Nursery/Landscape Expo, Houston, TX. (512) 280-5182.

23

Michigan Turfgrass Field Day, Lansing, MI. (517) 321-1660.



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## Calendar of Industry Events

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### August, continued

24-27

Ornamentals Northwest Seminars and 2000 Farwest Show, Portland, OR.  
(800) 342-6401.

8-9

Iowa and Nebraska Nursery & Landscape Association Joint Field Day,  
Shenandoah, IA. (816) 233-1481.

15

Cornell University Field Day, Ithaca, NY. (607) 255-1792.

16-19

Golf Course Builders Association of America Summer Meeting, Louisville, KY.  
(919) 942-8922.

18-21

Texas Association of Nurserymen Nursery and Landscape Exposition, Houston.  
(512) 280-5182.

23

Michigan Turfgrass Field Day, Lansing, MI. (517) 321-1660

24-27

Ornamentals Northwest Seminar and Farwest Show, Portland, OR. (800) 342-6401.

### September

7-8

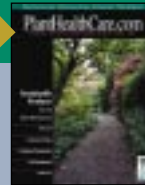
Southwest Horticultural Trade Show, Phoenix, AZ. (480) 966-1610.

13

Hampton Roads Agricultural Research and Extension Center Field Day,  
Virginia Beach, VA. (757) 363-3906.



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## Calendar of Industry Events

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September, continued

15-16

Tennessee Nursery & Landscape Association Trade Show, Nashville, TN.  
(931) 473-3951.

19-21

Turf and Landscape Field Days, Blacksburg, VA. (540) 231-5897.

21-23

Florida Nursery and Allied Trade Show, Orlando. (407) 295-2994.

26-27

National Buildings and Grounds Maintenance Expo, Las Vegas, NV. (702) 893-9090.

October

13-14

Plant Biology Workshop, Plant Health Care, Inc. Education Center, Frogmore, SC.

■ [Click here for more information.](#)

November

3-4

Plant Biology Workshop, Plant Health Care, Inc. Education Center, Frogmore, SC.

■ [Click here for more information.](#)

4-7

Green Industry Expo, Indianapolis, IN. (770) 973-2019.

12-14

International Irrigation Show, Phoenix, AZ. (703) 573-3551.

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