



# Bulletin

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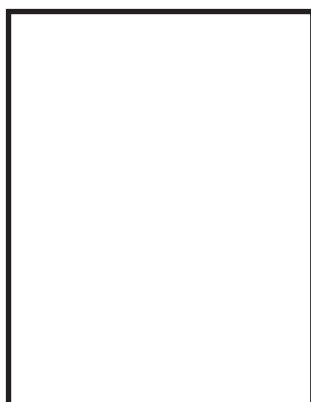
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## Getting A Firm Grip on pH Drift



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### WHAT IS pH DRIFT?

The definition of pH drift is simply this: the slow, insidious change in the soil solution pH as affected by breakdown of components in the soil media. This drift in pH is caused by environmental factors interacting with one or more of the materials added to the soil. The pH of your soil mix will always drift with time. The question is, do you know which way it's going? Soil pH is a moving target that every greenhouse grower must continuously monitor. We know where it should be, and hopefully we know where it was when we transplanted plugs or cuttings. All too

frequently, however, we don't know which way it's going, or how fast, until the plant shows serious problems. Our goal today is to help you visualize why you should implement a weekly program of monitoring your pH.

### pH DRIFT FROM THE PLANT'S POINT OF VIEW

Describing pH is a real challenge. Describing how a plant might perceive pH is even more difficult. However, we can get a handle on this issue if we think about taking a shower. (You knew any article that Steve Carver and Paul Thomas worked on together would have to be a

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## TRAINING FOR PLANTS' SAKE



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Employee training is one of the most important aspects of your company's future. We all know how important it is, but with our many client demands, it's hard to find time for training. It's our job to find the time to provide employee training. The long-term benefits are immense.

What should the initial training consist of? The trainer needs to decide on the length of the training period. Have a

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**OFA Mission Statement**

To support and promote floriculture professionals through life-long learning, career enhancement, and public awareness.

(As adopted by the OFA Board of Directors 2/24/02)



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**FAREWELL**

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How do you begin saying farewell to those you owe credit to and enjoy working with so much? Most of you know I have had a 35-year relationship with the Ohio Florists' Association and the Short Course. For 11 years, I was with Ohio State University Extension, visiting growers and helping with the educational sessions at the Short Course. For the next 15 years of my career, my relationship with the Association and Short Course was as a research and manufacturing director for a horticulture products firm. I served on the Grower Short Course Committee, and our company exhibited at the Short Course. For the last nine years, I have proudly served as the Association's Executive Director. Needless to say, I have floriculture, OFA, and the Short Course in my blood! Basically, all of these experiences revolved around developing relationships within the industry. What I will miss most is the people I've served and the relationships I developed!

When asked what I was going to say in this message, I joked by giving two statements. I first said my message would be a short, "Goodbye, good luck, and may the good Lord take a liking to you all!" The other was, since John R. Holmes will be following me - "Just let John do it!" As those who know me and work with me, I am serious and dedicated to serving at the highest levels, but also feel a little humor or laughter is a part of my style.

Actually, I have never been very succinct, to which my communications staff will attest. I always want everyone to fully know the background of any decision so that they can better understand how and why the decision was made - knowing full well that many times they still may not agree with that decision.

**BACKGROUND ON RETIREMENT DECISION**

Really, in addition to the commitment I have to helping my father-in-law, it became clear that my passion for the Association had risen to a level of missionary zeal. I did not want some decision to be made without OFA clearly understanding the implications or ramifications of that decision to the members or our programs. I was beginning to feel that some decisions were being made just to finally get it over with or so the meeting could rapidly come to a close. Simply said, I was becoming too close and too wrapped up in my work.

I have always believed that if one has performed well, one is not replaced, but rather someone follows that person. It is time for someone to follow me with the talents and skills to step back and provide their insights and assessments and take the Association to the next level.

WHERE IS OFA NOW?

I do feel I am handing off the Association to John with it being in much better shape organizationally, financially, educationally, and staff-wise than I received it.

I believe the combination of my knowledge of the industry, my involvement with OFA, my service with The Ohio State University, my experience as an exhibitor, my belief in the importance of education, my receptivity to the counsel and advise of others, my faith and interest in a good staff's contribution, my business finance and budget experience, and my people skills equipped me to serve you and the industry well.

I have tried to build on the work of each of the Association's prior three secretary-treasurers/executive directors, who contributed to OFA and the Short Course's foundation of a strong educational direction and programs as well as its availability to everyone in the industry, regardless of location.

WHY WE ARE WHERE WE ARE

I would be less than frank if I did not admit that my first two years were particularly difficult. As much as I was told of the challenges that would confront me, I did not fully understand the difficulty of the transition, the need to mend fences, the depth of the restructuring, and the dire need to implement a new, strong, operational structure for the organization. The beauty was that OFA and I had the counsel and guidance of an exceptionally strong and receptive volunteer leadership. As a group, all the executive committees I served, with their respective board's blessing, played an instrumental role in helping OFA achieve the prominence it enjoys today.

It is always difficult to name individuals, because I am bound to miss someone of equal importance, but I must recognize the OFA presidents I served with – Roger Feist, Walt Krueger Jr, Gordy Perkins, Justin Marotta, Jack Schmidt, and Joe Boarini. Their individual sacrifice, commitment, contribution, and counsel will never be fully known, but is reflected in the kind of successful association into which OFA has evolved. Other individuals providing substantial contribution, in my opinion, include Dennis Puppel, Bob Calder, Paul Ecke Jr, Bob Maddux, Peter Konjoian, Alex Masson, and Paris Fracasso. Yes, there were many, many others. Those unnamed are a huge part of our member- and committee-driven philosophy.

The next group of equal importance who have contributed to making OFA what it is today have been the individual staff members who have served with me. They too have believed in what OFA and the Short Course is, can be, and should be. They have given unselfishly of their time and talent to help OFA be all it should be. I believe each provide their contribution not as a job, but as a mission.



SOME HIGHLIGHTS OF THE PAST NINE YEARS

During my nine short years of service with OFA, the following are some highlights. The Association has become financially sound, owning a mortgage-free building, having

a reserve fund in excess of \$300,000, and utilizing a strong system of financial development and control, with profit and loss responsibility distributed among all the staff members.

In the information and publications area, we have broadened the sources of information, as well as the quantity offered, while improving print and format quality for our *Bulletin* and "Tips on Growing..." series. We've added two newsletters – *FirstNews* for member communication and *Exhibitor Connection* to help and update our exhibitors. Our OFA web site has been established and vastly improved, becoming more interactive and providing more services and information. An OFA *Membership Directory* is now available, and it recently became an annual publication that is also searchable on-line in our members-only site.

Membership continues to grow, reaching out to 50 states, the District of Columbia, and 25 countries. Educational outreach seminars, U.S. tours, and international tours are offered in various states and countries for retail florists, interior landscapers, garden center operators and employees, and greenhouse growers. We have become leaders in partnerships with others to eliminate duplication, including the Society of American Florists, Michigan Floral Association, Southern Nursery Association, Bedding Plants Inc., Floriculture Industry Research and Scholarship Trust, and America in Bloom.

The Short Course is truly recognized as U.S. Floriculture's Premier Educational and Trade Show Event. Globally, we are known to be one of the big three floriculture shows: HortiFair in The Netherlands; IPM/Essen in Germany; and the OFA Short Course in the United States. Our attendance has grown to more than 10,000 the last two years. Attendees were from 49 States, the District of Columbia, and 32 foreign countries. The educational program offers a choice of nearly 200 seminars for all industry segments, while the Trade Show has grown to more than 1,200 exhibit spaces, and 500+ exhibiting companies.

As one of our OFA presidents commented, "It's been a great ride!" I am pleased to have helped you accomplish so much and be able to pass on this and such a competent staff to John R. Holmes' leadership. I shall miss you all and mostly our interactions for the good of the Association and our industry. My hope is to still keep in touch with you and the industry. As I have said before, it is in my blood, but more importantly, it's in my heart!

OFA

**Congratulations on your retirement, Dennis**

# Ornamental Grasses – The Next Wave

## John Greenlee

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Think ornamental grasses have peaked? Think that fad has come and gone? Well, think again. Grasses have never been hotter. Ornamental grass sales continue to rise for a variety of reasons. First is customer education. Grasses have finally been recognized by the average American gardener. Witness their availability not just at specialty nurseries and in catalogs, but at the big box stores! Another reason grass sales have been hot is the increased availability of regionally adapted grasses with new varieties that stay compact. A lot of the first ornamental grasses in the trade were unsuitable for the southeast, southern, and southwestern United States, and many were too big and floppy for most containers. Perhaps most importantly, grasses are increasingly being utilized as annuals, which have fueled a trend toward grasses in containers,

even in the coldest American climate zones.

Greenlee Nursery in Pomona, California is the oldest and largest ornamental grass nursery on the West Coast. We specialize in both native and ornamental grasses, shipping grasses throughout the United States and Canada, and marketing primarily to zoos, golf courses, and large landscape projects. With EuroAmerican, Greenlee Nursery is offering the John Greenlee Collection, which focuses on grasses for pot culture. Since there is a market for baskets for shady sites, sunny sites, and varying seasons, this collection has grasses for many kinds of potted products and situations.

Take the new *Pennisetums* or Fountain Grasses for example. Two new varieties are *P. mesaiacum* 'Bunny Tails' and *P. spathiolatum* 'Skyrockets'. Both are compact growers with flowers that bloom well before the typical *P. alopecuroide* varieties. In California, these varieties were blooming in mid-March! Another great attribute of these new grasses is their upright vertical flower stems,



which put the grass flowers up in the air. Another grass featured in the collection is the compact red fountain grass – *P. 'Red Riding Hood.'* A shorter, more compact habit makes this a big improvement over the taller, sometimes floppy *P. setaceum rubrum.*

Don't forget about grasses that are great for the shade and great for smaller pots; there can be big profits in small products. *Liriope sp.* 'National Arboretum' and *Carex berengrenii* are two excellent choices for bonsai-style plantings and miniature pots. For shade baskets and pots, try *Carex caganishiki* and *Brachypodium sp.* 'Denver Botanical Garden.' For bog gardens or water gardens, look at the ribbon grasses, *Phalaris*, or the golden rush-like foliage of *Baumea rubiginosa* 'Variegata.' Wildly popular is the easy-to-grow fiber optics grass. The water gardening industry is one of

the fastest growing markets in horticulture today.

Why not consider native American grasses and sedges? The trend toward planting natives is only going to get stronger in America. Patriotic themes are not just hollow gestures anymore. People want to celebrate native plants. Try *Chasmanthium latifolium* northern sea oats or *Carex tumulicola* for two all-American grasses that are excellent in containers.

With so many varieties that cover so many needs, there should be an ornamental grass that will work with your existing product lines. With so many new grasses to choose from, there are bound to be new combinations that have yet to be imagined. Why not try ribbon grasses (*Phalaris*) with Easter lilies in baskets, or the chocolate sedge, *Carex* 'Toffee Twist' with candy on Mother's Day? **OFA**



**JULY 13 – 17, 2002**  
**GREATER COLUMBUS**  
**CONVENTION CENTER**

## 2002 Short Course Registration Timeline

- April 29 – May 1** Registration/Reservations accepted via on-line and faxes (8 am EST)  
*Mail must not be postmarked prior to May 1.*
- May 2–3** Registration/Reservations accepted via on-line, faxes, and mail
- May 6** Registration/Reservations accepted via on-line, faxes, mail, and phone (8 am EST)

More information is available at [www.ofa.org](http://www.ofa.org) and in the Short Course program, which you'll receive in April.

## GETTING A FIRM GRIP ON pH DRIFT

*Continued from page 1*

bit different!) Every one of us has a preference as to how warm the water should be. Some like it very hot, some prefer just barely above luke-warm temperature. A few eccentrics like it cold. People rarely change their preferences. Remember how you felt the last time you were taking a shower when some "inconsiderate" household member turned on the hot water, shaved, or washed dishes or clothes? Nothing like a sudden jolt of cold water to make your morning! It might even ruin your whole day if those long, hot showers are a singular haven of peace in a house full of kids. If the temperature is not right, you're not happy.

Soil pH happens to be just as important to plants. Each plant has a defined pH that it prefers. Each plant has a range of pH either side of that optimal value that it can grow comfortably in. If the pH drifts out of range, plant roots can't jump out of the shower or quickly cut off the water. The further away from the ideal pH the plant is exposed to, the harder the plant has to work to survive. If the drift goes too far, the roots simply fail to work properly and deficiencies and toxicities occur.

Roots are very sensitive to pH. The acidity or basicity of the soil solution a root is trying to live in determines how well it can take up nutrients, how fast it can grow, and how much energy it must expend to keep ions in the cells balanced.

### pH DRIFT FROM THE WALLET'S VIEW POINT

It may be difficult for growers stretched to the limit with spring planting schedules and long-haul deliveries to give it much thought, but actually, pH

drift is a wallet issue. It's hard to see the direct effects it has on the bottom line. So what's so bad about a little pH drift? What's wrong is that it can cost you significant loss of profit! Not just a few pennies either! Extension specialists see a great many plant problems, and rarely are they inexpensive or inconsequential. Here are just a few examples from this past year.

In North Carolina, a grower planted 1,200 flats of pansies for late fall delivery. Sales were slow last fall, and the dry weather didn't help. The grower used a good quality soil mix and a top grade fertilizer. However, he did not check pH ... ever! He assumed the soil company had that covered. His crop stayed put as the stores held off orders. Three weeks past the planned shipping date, the market opened up and the orders came in. Sadly, the pansies were turning yellow ... very yellow and had become worthless. It was not from over- or under-fertilization, poor watering practices, or a mysterious herbicide. It was *Thielaviopsis*, a terrible root rot disease that affects pansies that are grown in soils that have a pH above 6.5. *Thielaviopsis* loves pH 7.0. Pansies prefer 5.6. It took less than three weeks for the pH to slowly drift up to 7.2, and it cost the grower \$120,000!

Impatiens require a pH of 6.2 to grow well. Roger Styer is well known for serving up a powerful homily on all that can happen to impatiens grown in the wrong pH. A recent problem-solving visit to a grower who had attended one of Roger's talks revealed a crop of 230 flats of impatiens being contract grown for a very strict shipping date. One week before the ship date, the grower

realized something was wrong. The trouble was, the plants were growing, but slowly. The grower kept thinking it was weather related and felt they would catch up when the sun returned. The sun did return, and the impatiens sat there. Upon testing the soil, it was discovered the pH had bottomed out at 4.5. The grower should have listened to Roger. Scratch one contract.

Who among us has not heard the horror stories of certain geraniums that can actually acidify the soil to a point where it causes nutritional problems? Each one of those horror stories had a price tag, and given the cost of geraniums and the time it takes to get them up and running, you can see that the financial losses were probably serious. Imagine the surprise of walking into a large greenhouse and finding out that the grower did not check the pH of his geraniums weekly. His reasoning? "I'll know if there's a problem when the symptoms show up ... I'm actually not worried about it because I'm using a base-forming fertilizer." After a few moments to regain composure, we checked the soil only to find the pH was 4.6 ... and dropping.

### WHY DOES pH DRIFT ANYWAY?

The pH of a soil is a function of how much acidity (H+) or basicity (OH-) is in the soil solution. Acidity can naturally come from peat moss, bark, the plant roots themselves, acidic water sources, acid-forming fertilizers, or amendments such as iron sulfate. Basicity can come from limestone, alkaline water, and base-forming fertilizers. It should only take a moment to realize that there are quite a few things that might interact to change the pH of your soil.

Soil manufacturers have

spent millions of dollars researching and devising methods to minimize pH drift in their soils. Major companies test their production on a daily basis and track long-term changes in the soil pH just to be sure. However, despite their diligent manufacturing efforts, they cannot control what happens to the soil or what materials you put into it once it leaves their factory.

Each time you fertilize, leach, or change the light levels or greenhouse temperature – or even nothing more dramatic as time slipping away while plants sit on the bench – there are dozens of factors that interact with the lime particles and soil components. Eventually, some component is overwhelmed and the pH goes wandering. There is actually nothing you can do to prevent the drift from happening. You can adjust for it, manage it, and even reverse it, but you can't stop it. Your best bet is to scout your crop pH weekly and take management steps to control or reverse the drift.

### FACTORS THAT AFFECT pH DRIFT

Soil Components

Peat moss has different characteristics depending upon how finely it is shredded and from where it was harvested. Peat usually imparts a very strong pH effect, being very acidic. Peat moss with a pH of 4.3 is not uncommon. Growers have for tens of years added crushed limestone to compensate. Because each peat source is different, the amount of lime must be tailored to that source. Peat eventually breaks down, and its ability to impart an acid pH can decrease over time.

Bark, like peat moss, can be very acidic. Again, pH values of 4.4 to 4.7 are not unusual. Once again, lime is added to adjust for the acidity.

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## GETTING A FIRM GRIP ON pH DRIFT

*Continued from page 5*

Bark however, is long lived and can easily stay intact for years after the lime has dissolved. One of the greatest challenges bark mix manufacturers have to overcome is finding the right size particle mix of lime to accommodate the long production life of the mix. In some nurseries, a plant may be in the same pot for three years or longer.

Both peat and bark break down over time and when they do, many of the by-products are acidic. One of the products of breakdown is carbonic acid (H<sub>2</sub>CO<sub>3</sub>).

Lime sources vary, but the potential basicity for most limestone sources is known. Where the problem lies is in the size of the lime particles. Tiny particles release the base-forming ions rapidly. If you use too much of the fine material, the pH will skyrocket up and then drop precipitously over a few weeks of production as the lime is exhausted. Use too large a size, and the pH may drop initially, then continue downward for weeks until the larger particles begin to break down – at which point the pH can rise quickly and get out of control. Either scenario would not be good for sensitive crops such as pansies and impatiens. Soil companies must mix different sized lime particles together so there is just the right mix of small, medium, and large particles to cover the pH effect of the media components for the life of the crop. This is NOT easy to do.

### Fertility Sources

Probably the hardest thing to teach a new grower is the fact that what you choose for a fertilizer will significantly affect your soil pH over the long run. Each fertilizer has been carefully formulated, and its ability to impart an

acidic or basic effect is known and documented on the bag. In simple terms, when you see a value of “**Potential Acidity**” on the bag, that number refers to how much acidity that product can impart. The higher the number, the more acidity it can provide and the more acidity there is to react with lime or alkaline water.

“**Potential Basicity**” works the same way. The higher the number, the greater the potential to provide basic ions (OH<sup>-</sup>) and raise your pH (Table 1). We say “potential” because like soils, it also depends upon what water you are using, what soil type you are adding the fertilizer to, and what amendments

are present that can interact with pH.

You can actually swap fertilizer products to manage your pH problem, assuming you know where you are and which direction the pH is drifting. Obviously, we will need more than one assessment to determine direction. More on sampling later. Just remember that your fertilizer can be considered a pH management tool.

### Form of Nitrogen Can Also Affect Soil pH

The effect of the form of nitrogen can be dramatic. This effect is actually built into the potential acidity/basicity numbers commercial mixes provide on the bag, so if you use a good commercial mix, you need not take any additional steps. Where

growers get into real problems is when they add supplemental nitrogen sources such as calcium nitrate, the most widely used supplement. It is an excellent fertilizer and is often used in poinsettias and pansy production. CaNO<sub>3</sub> is a base-forming material. Remember those pansies? CaNO<sub>3</sub> reduces stretch in pansies grown in hot weather. It is a great product to use to prevent bract edge burn in poinsettias. The trouble is, it also raises pH and competes with boron, the combination of which can greatly affect availability of several nutrients. The pH change can be very slow, but when CaNO<sub>3</sub> is applied for more than a five- or six-week period, the pH can drift significantly.

**Table 1. Acidity and basicity of principal fertilizer materials and common fertilizer formulations<sup>(a)</sup>**

Fertilizer (nutrient analysis)	Effect of Fertilizer on pH	
	Alkaline Reaction (lb. of CaCO <sub>3</sub> equivalent in 10 lbs of material)	Acidic Reaction (lb. of CaCO <sub>3</sub> needed to neutralize 10 lbs of material)
Ammonium nitrate (34-0-0)		5.9
Ammonium sulfate (21-0-0)		11.2
Calcium nitrate (15.5-0-0)	2	
Diammonium phosphate (18-46-0)		6.4
Diammonium phosphate (21-53-0)		7.4
Magnesium nitrate (10-0-0)	1.96	
Monammonium phosphate (11-48-0)		6.5
Monocalcium phosphate (0-55-0)	neutral <sup>(b)</sup>	neutral
Monopotassium phosphate (0-53-35)	neutral	neutral
Nitric acid, 67% (15-0-0)		2.7
Phosphoric acid, 75% (0-54-0)		5.3
Potassium chloride (0-0-60)	neutral	neutral
Potassium nitrate (13-0-44)	2.3	
Potassium sulfate (0-0-50)	neutral	neutral
Sodium nitrate (16-0-0)	2.9	
Sulfuric acid, 35% (11.5% S)		3.6
Superphosphate (0-20-0)	neutral	neutral
Treble superphosphate (0-45-0)	neutral	neutral
Urea (44-0-0)		8.4
15-0-15	1.6 to 2.1	
15-16-17		1.0 to 1.1
20-10-20		2.0 to 2.1
20-20-20		2.4 to 3.0
21-7-7		1.8 to 7.8

a=alkaline fertilizers tend to raise the media pH over time, while acid fertilizers tend to lower media pH over time.

b=neutral means the fertilizer has no significant long-term effect on soil pH.

Plant and Microbial Species Can Affect pH Also

Geraniums are famous for exuding organic acids and adversely affecting the pH of the soil. In truth, they do this (in field soils) to make trace elements more available to the plant. When grown in acidic peat or composted bark soils, the pH reduction causes great amounts of iron and other materials to be released. Toxicities and deficiencies are not far behind.

What you may not know is that other life forms can do the same thing. Bacteria, some fungi, and many algae can all affect the soil pH to some degree, usually making it more acidic. As they interact with organic material such as peat, the soil can produce sulfuric acid ( $H_2SO_4$ ) and nitric acid ( $HNO_3$ ). When using artificial mixes, the pH drift caused by these biological factors is usually small. Why? Because there are not many microbes present compared to naturally occurring soils. However, in outdoor production or long-term container production or when using natural composts as amendments, this biologically driven process can be sur-

prisingly effective at breaking down lime particles more rapidly than the grower or soil manufacturer predicted. Scouting pH in outdoor production is mandatory!

#### Water Source

You will probably agree with us that you water your plants often, and by volume, you add more water to the crop than any other greenhouse input. It follows then that your water supply's pH and alkalinity, as well as the volume applied, will play a huge role in pH management. There have been entire articles written on alkalinity and pH. We suggest you go back through the OFA *Bulletin* articles that cover water alkalinity and reread them.

The rule is: the higher the level of dissolved ions and salts in your water, the more potent the water will be at affecting your soil solution pH. Pure water may have a very low or high pH, but there is so little material in the water to interact with the soil that for all intents and purposes, it's not going to change the pH one bit.

On the other hand, if you have hard water, which

is water rich in calcium salts and other minerals, the pH of your water will be very potent. Hard water at an alkaline pH of 7.2 can be devastating to a crop of pansies, whereas almost pure water at an alkaline pH of 8.5 may be of little consequence. Unless you have near-perfect water, you need to scout pH. If your water is the problem, you'll need to take steps to reduce the alkalinity (Table 2). A number of articles discussing this topic have been published in the OFA *Bulletin* in recent years, including May 1995 (Pasian, C. 1995, Water Quality – pH and Alkalinity, pg 11-13); May 1997 (Vetanovetz, R. and Ferry, S, Adjusting Alkalinity with Acids, pg 1, 14-15); and September 1999 (Ferry, S and Hulme, F, Reflections on Water Quality, pg 1, 8-10).

#### Time & Weather Factors

If weather is hot and irrigation is frequent, you can dissolve the lime/iron sulfate particles rapidly and have your pH drop or rise precipitously, depending on the soil type. If you remember that Q-10 effect we discussed a few issues ago (September 2001 OFA *Bulletin*), you'll be happy to know that lime breaks down faster in warm

soils than cold soils, so seasonal weather differences can affect the life span of any lime mixture and affect your pH control dramatically. If you think about it, most pH problems are reported in early fall or late spring. Now you know why. The warmer it is, the faster the pH problem raises its ugly head.

Many growers have water sources that show a change in pH and alkalinity depending on the season. When rainfall is low, the groundwater has more time to dissolve lime, and hence may be more alkaline. When rainfall is high, the volume and speed at which water passes through the rock strata may increase and hence the water may not be so alkaline or have such a high pH. In Georgia, there is one grower whose water supply goes from a pH of 7.3 with low alkalinity in winter and spring to a pH of 8.3 with high alkalinity in summer and fall. You can imagine the havoc that causes in his pH management program.

The only way to know is to test your water monthly, consistently for a year or two, and every four to six months from then on.

*Continued on page 8*

**Table 2.** Characteristics of acids used to neutralize water alkalinity.

Acid Type	Typical Strength	Relative Hazard	Nutrient Content (ppm) <sup>(z)</sup>	Neutralizing Power <sup>(y)</sup>	Specific Gravity	mis ACID/ ppm alk/100 gal <sup>(x)</sup>
Phosphoric	75%(w)	Moderate	25.6 P, as phosphate	45 (u)	1.381	0.7
Sulfuric	93% (v)	High	43.6 S, as sulfate	136	1.835	0.23
Nitric	63%	High	14.6 N, as nitrate	52.3	1.381	0.56
Citric	100%	Low	None	N/A	N/A	N/A

u=Assumes ~1/3 of acid is effective since phosphoric acid does not completely dissociate.

v=93% sulfuric acid also known as 66 be' (Baume') acid. Battery electrolyn is recommended by some and is ~35% strength.

w=Phosphoric acid comes in many strengths, but 75% is most common. Use heavy metal-free grade or food grade if possible.

x= Conversion factor of strength of acid at the specific gravity stated. Example: If you have an alkalinity of 250 and you want to target 150, then you need to neutralize 100 mg  $CaCO_3/L$ . If you use sulfuric acid, then  $100 \times 0.23 = 23.0$  mls acid per 100 gallons.  $23 \text{ mls needed} / 29.6 \text{ (mls/fl. oz)} = 0.77$  (~0.75 fl. oz)/100 gallons water. Rates will depend on exact strength and specific gravity.

y=Amount of alkalinity (mg  $CaCO_3/L$ ) neutralized when 1 fl. oz acid is added per 100 gallons of water.

z=Nutrient content when 1 fl. oz acid is added to 100 gallons water. Make appropriate adjustment to program.

## GETTING A FIRM GRIP ON pH DRIFT

*Continued from page 7*

### HOW DO I DETERMINE IF I HAVE pH DRIFT?

There are several techniques to use. The very, very best is a weekly, greenhouse-wide canvassing effort. Years ago, this would have been horrendously expensive. Now, using the pour-thru method described by Brian Whipker and the NC State team (April 2000 OFA *Bulletin*, Cavins, T; Whipper, B; Fonteno, W; and Gibson, J; Establishing a Pour-Thru Sampling Program: Part I, pg 1, 7-11; and May 2000 OFA *Bulletin* Cavins, T; Whipper, B; Fonteno, W; and Gibson, J; Establishing a Pour-Thru Sampling Program: Part II, pg 11-14), growers can nondestructively test pH quickly, inexpensively, and effectively. You can track actual pH values on a weekly basis and devise management plans long before a problem ever arises.

However, in terms of personnel management, it won't happen unless you make it someone's job for which they are accountable. Some greenhouses in Georgia are making their first-level managers responsible for this testing, and pay raises and perks are dependent upon submission of weekly test results. When their checks are on the line, the soil pH gets tested. The advantage to all that work is that you'll never be caught off guard. The weekly data will clearly show the trends and fluctuations provided by weather and fertilization. It puts power into your decision making process.

For growers who do not have management employees or are running the daily management themselves, there is a shortcut method that reveals most problems in sufficient time to prevent many major crop losses in

crops that are on the bench longer than six weeks. One-gallon perennials are a great example. It is called the W-147 Test. Simply put, you test your soil one week after transplant, four weeks after transplant, and seven weeks after transplant. These times are not accidental, and correlate to the most common time periods when pH is likely to change. W4 is implemented when roots are established and the soil/lime interactions are stable. The W7 test looks for change as roots fill in the pot and as small particle lime is depleted. The differences can tell you which way the pH is headed. If it is drifting, you'll need to treat the soil and test every week until it's stabilized.

For short-term crops, such as bedding plants, one would use a W13 Test. W1 is again the initial pH at transplant, and thus W3 is a second point midway into crop development. This will give you just enough time to fix a problem before the crop is shipped W5-W7.

Testing pH is one thing; recording and tracking pH is another. If you are going to put all this work into testing your pH, you'll want to record your findings to help visualize the changes and document them for future use. Over time, you'll see different trends in different soil mixes, be able to predict what effects weather and fertilizer products will have on your soil, and be able to determine how quickly things change in your system given different amendments. Without keeping records, you'll be rediscovering (recreating) problems every year that could have easily been prevented. Tools such as Figure 1 can help you track pH



drift, monitor effects of corrective actions you take, and provide a basis for actions next year.

### FIXING pH PROBLEMS ON-THE-FLY

Most growers have found that if they can put their finger on the direction of the pH drift early in the crop cycle, it's a simple matter to switch fertilizers to implement the pH change. However, it is inevitable that there will be times when using fertilizer for pH management may not be enough. If the pH drift is rapid, you may need to take action. The following are fairly standard recommendations for adjusting soil pH on-the-fly. Keep in mind that the amounts shown are intended to raise the pH one unit or less, within two to six weeks. One note of caution: Always read the labels for rate recommendations. Your pH and soil volume will be different from the examples shown here. Consult the manufacturer if you have questions.

#### pH DRIFTING TOO ACIDIC

In cases where pH is becoming acidic, products that contain dolomitic limestone are preferred. Calcium hydroxide ( $\text{Ca}(\text{OH})_2$ ) can compete with and bump off magnesium already in the soil, yielding a magnesium deficiency. Products such as flowable dolomitic limestone are preferred. If you wish to inject this material into your distribution system, one application at a rate of 2 to 4 quarts of product per 100 gallons will raise the pH one unit within a few weeks. Alternatively, you can apply it directly to the soil surface. To raise the pH one

unit in a standard 5-inch pot, one would apply 1 level tsp/pot. Soil-applied materials always take longer to work, so plan on waiting up to six weeks to see results.

If immediate pH adjustments are needed, then flowable calcium hydroxide will work more quickly than flowable dolomitic. A rate of 1/3 tsp per 6-inch pot is recommended for a one-unit pH change. Remember, hydrated lime is very reactive and can cause root damage and deficiencies. This product also causes the release of ammonia gas if high ammonium fertilizer products are being used. Slow-release fertilizers are frequently high in ammonium nitrate.  $\text{Ca}(\text{OH})_2$  is also very caustic and can burn/dehydrate unprotected skin. Follow directions carefully and use only in cases of last resort.

#### pH DRIFTING TOO BASIC

It is easier to adjust pH down than up. This is because most of our soil media components contribute acidity and thus, pH drift toward the basic side is usually slow. To reduce the soil solution pH one unit, ground elemental sulfur is commonly used. Elemental sulfur breaks down slowly and rarely burns root tissue once watered in. The pH change will take two to three weeks. A rate of 1/3 tsp per 6-inch pot is a common recommendation. Flowable sulfur is also available, and rates of 0.3 to 3 quarts per 100 gallons water are frequently cited to adjust soil on pH unit. Again, consult with the product label for a much more exact recommended rate.

If you need a more rapid decrease in soil pH, there are two products you may use: iron sulfate  $FeSO_4$  and  $AlSO_4$ . Each interacts with alkaline materials in about the same way. Iron sulfate reacts a bit slower than aluminum sulfate, which reacts fairly quickly. To reduce the soil pH one unit, 1/2 teaspoon is applied to the soil surface of a 6-inch pot. You may consult with some of the references cited in the bibliography for more specific rates and recommendations.

If you determine you have a pH drift problem, it is fairly easy to control. It is

more difficult to resolve which input is affecting your pH the most. It might be your fertilizer, the soil mix, your water, or some other factor. A thorough testing of all your preplant production inputs, including your water source, fertilizer, and greenhouse soil, is required to take steps to reduce pH drift for the next crop cycle.

**SUMMATION OF THE BENEFITS OF A SOUND pH MANAGEMENT PROGRAM**

More profits, fewer headaches, improved quality, a more solid reputation for you and your company, and

last but not least, happier customers, are all direct benefits that come from this one simple act. Implement scouting and tracking of your soil pH this week. Again, assign someone in your employ to do this weekly using the pour-through method, and tie the reports and graphing to their paycheck. The information pH testing will provide can greatly improve your ability to manage a crop at very little cost, and you can avoid costly delays and losses due to pH drift.

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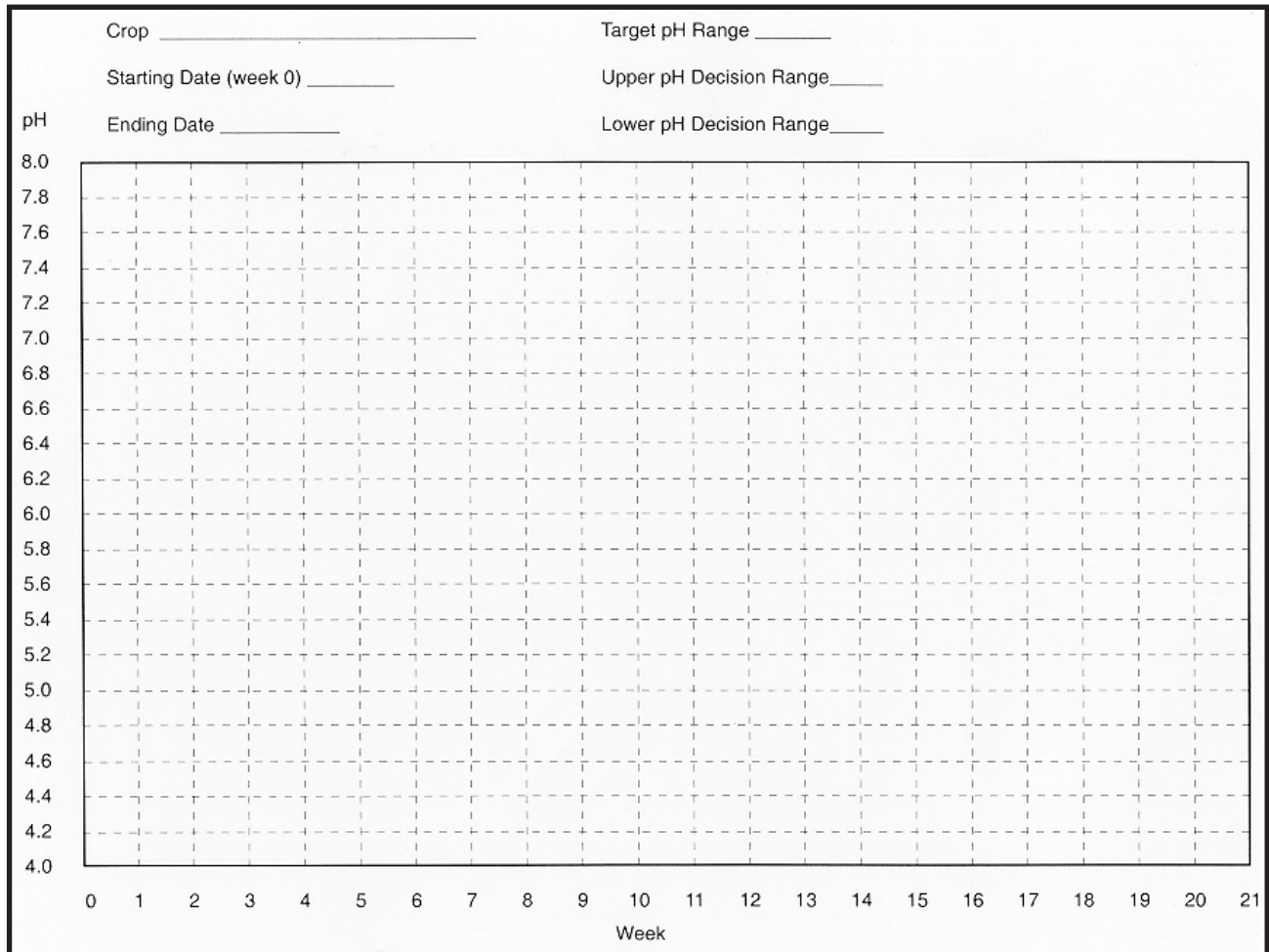
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Figure 1. PourThru pH chart.



## TRAINING FOR PLANTS' SAKE

*Continued from page 1*

game plan or guidelines you can follow for each day and week. The trainer should be prepared; set a day aside for planning the training. Use this day to gather information, paperwork, equipment, and supplies. For example, does the trainer know the route? It's hard to train on a route you're unfamiliar with. Do you know your client contact, water source, the location of all plant material, or even how to get to the account? Teach yourself before training your new hire.

Training for your technicians consists of two basic areas, horticultural knowledge and job responsibilities.

### HORTICULTURAL KNOWLEDGE

Horticultural knowledge includes plant characteristics, light requirements, watering (how much and how little), plant knowledge, use of equipment, and company practices and procedures. Watering is the number one priority. It is the hardest part of our job and definitely the hardest to train. Overwatering and underwatering are the number one reason we replace or improve plants on an account. The best training tool for determining the amount of moisture in the soil is the soil probe.

There is a lot you should consider before you start to pour water on a plant. Here is a mental checklist to follow:

- What kind of plant is it?
- How much light is it receiving?
- How often do I visit this plant – weekly or every two weeks?
- How does the foliage look?
- How moist does the soil feel?
- Does the plant have any insects?
- What kind of growing container is it in – subirrigation, terra-cotta or is it direct planted?
- How long has it been on the job site?

Listed below are different methods to use to help your technicians gauge the amount of water they are giving plants:

- **Counting system** (one one-thousand one, two two-thousand two) – How many counts does it take for a pint, quart, or gallon of water?
- **Timed system** – How many seconds or minutes for the correct amount of water you need to apply?
- **Measurement system** – Water until you see water in the saucer or container and subirrigation systems.

Plant knowledge is the second priority. Teach technicians the common names, botanical names, and families.

Use of equipment is also very important in the training process. Safety and handling procedures need to be reviewed. This includes correct ways to lift a water machine, proper ways to use pruners and scissors, and of course proper cleaning of all equipment. It's important for all employees, after reviewing safety procedures, to sign off that they understand and have received the training. When the employees understand how to use the equipment and act safely, the chances of injuries are reduced greatly.

And of course, during the training process, it is essential that you discuss your company's horticultural practices, such as these:

- How to clean – methods and what type of solutions to use
- When to prune and how
- Introduction to insects and what to look for – webbing, honeydew, sticky surfaces

- How to treat for insects
  - When to replace a plant
  - Cleaning of decorative containers
  - Top dressing – mulch, spanish moss, etc.
  - Diseases – what to look for and treatment, if any
- Technicians need to know what your company's overall expectations are and the expected aesthetics of all accounts.

### JOB RESPONSIBILITIES

Teaching job responsibilities is essential to the technician's and the company's success.

Their responsibilities should include: 1) knowing client contacts and talking to them each time they service the account; 2) any paperwork that the client needs to sign when the technician visits; 3) any client procedures the technicians need to follow, such as the following:

- Sign in and out of buildings
- Badges that need to be worn
- Parking locations
- Keys to water sources
- Procedure for inaccessible locations
- Office hours
- What entrance or exit to use
- Emergency situations in case of fire or accidents

Technicians need to know their routes and that they are responsible for completing them.

Have a written calendar for all employees. If for any reason they don't finish their route or need help completing tasks, advise them whom they need to contact.

Time frames are important. How long does it take to service each account? Also, how long does it take to get to each account?

Your company should have a procedure/policy manual in place. This should be given to your new technicians and reviewed the first day of training. The trainer and the trainee should sign off that it was reviewed and information understood. If a manual does not exist, here a few written rules and guidelines that should be followed:

- Contact for lateness and absenteeism
- Company standards and expectations
- Whom should they notify for vacation time and days off
- Uniform policy
- Disciplinary actions taken if the rules and guidelines are broken (do's and don'ts of the company)
- Benefits package

Administration procedures that should be discussed with a new technician include the following:

- How to fill out a time sheet and mileage report
- Advise them of any paperwork they need to fill out on a daily or weekly basis (such as visitor slips, changes to client contact sheets, changes to inventories, etc.)

One of the mistakes to watch for when training is trying to teach too much information in a short amount of time. It's better to space out the information and do repetitive training.

The first few days and weeks of training can set the tone for the technician's commitment to the job. Decide early if the job is right for your new technician because training is costly and time consuming. Both parties must be committed for the training process to work. It is important for your company's success to have the right employee as your trainer. The trainer must be enthusiastic, knowledgeable, energetic, good with people, and have a positive attitude. Great trainers are hard to find and are a very important asset to your company's future.

Taking the time to train and explain expectations will go a long way. Skimping on this leads to employee turnover and potential disruption in your client servicing.

#### TOP 10 TRAINING TIPS

Here is a list of my top 10 items that are important during the first week of training:

- 10. Have fun!** If you don't have fun at what you're doing, chances are you won't be doing it long.
  - 9. Quality Consistency.** Stress company standards and what a quality account should look like. If any forms are available to evaluate technicians' work, show them the first week so they understand their job responsibilities more clearly.
  - 8. Five Plants/One Per Day.** Pick the five most common plants you will service this week. Remember to use common and botanical names and go over some characteristics.
  - 7. Routing and timeframes.** Start training on routes. Remember timeframes for training on accounts will be longer – start with six hours of accounts and take eight hours to train. You can always add accounts in the following weeks.
  - 6. Client contacts.** Introduce each technician to clients. Stress clients' expectations. Go over any paperwork each client needs to sign.
  - 5. Basic horticultural practices.** Cleaning plant material; cleaning solutions; the use of sponges, paws, or rags; basic pruning techniques; removal of yellow or dying foliage. Introduce technicians to insects and treatment.
  - 4. Proper watering practices.** Introduce the technician to a soil probe and its proper use. Discuss moisture levels. Remember, this is the hardest part of our job.
  - 3. Use and care of equipment.** Office equipment, fax, copier, etc. How to use a water machine and its parts. The use of hand tools, safety, and how to clean them.
  - 2. Paperwork.** Daily work sheets or time clocks. Calendars or schedule for the week. How to fill out mileage reports.
  - 1. Job responsibilities.** Review training and procedure manuals. Discuss written guidelines if manuals are not available. Have technician sign and date that they have reviewed and understand the manual or guidelines the first day on the job.
- After each week of training, have a written checklist of the week's objectives. Document all objectives reviewed for each week. Check off each objective with employee date and both trainer and trainee sign off on those objectives. Technician should receive a copy of signed reviewed objectives, and a copy should go into that technician's files.



At the end of each week of training, the trainer needs to set aside time to prepare for the following week of training. What needs to be done first thing the following week? Review last week's training. Did the technician have any problem areas? Repeat first week.

Review the "Top 10 List" and add to each category. Categories should not change, just their priority. For example, review five plants from the first week's training and add another five for the second and third weeks. Ask the technician questions and make sure he or she understands all aspects of training. Listen to your technicians.

#### OTHER SUGGESTIONS

Training should not stop after the technicians are on their own. Remember the commitment we talked about? Well it doesn't stop here. This is just the beginning.

Why should we train? Here's my Top 10 List:

1. Quality of Work
2. Satisfied Clients
3. Knowledgeable Employees
4. Consistency
5. Efficiencies
6. Professionalism
7. Teamwork
8. Provide Ongoing Education
9. Positive Attitude
10. Lower Improvement Levels

In summary, here are some important things to remember. Always repeat information, and have continuous learning programs. It is important to promote further education within your company. Schedule on-the-job training sessions regularly. Set aside reading or study times for technicians. Invest in books, magazines, brochures, flashcards, and videos. Your investment is a small price to pay for a great, well-educated technician. Be committed to your company's training program, and see your company grow and prosper. Remember, have fun!

OFA

## **TIPS ON MANAGING FLORICULTURE CROP PROBLEMS: PESTS, DISEASES, & GROWTH CONTROL**

(REVISED FEBRUARY 2002)

One complimentary copy is on its way to each OFA member company as a membership benefit. This does not include associate members. Additional copies can be ordered at the member-discounted price of \$15 (regular price: \$30).

This "Tips" publication is an updated and expanded reference to the how's, when's, and why's of pesticide application, including information about the Worker Protection Standard. It also discusses methods of managing crop problems without chemicals, as well as integrated pest and disease management. This "Tips" also provides comprehensive, easy-to-use charts that explain the various pest management methods for greenhouses and interior plantscapes.

To order a copy of *Tips on Managing Floriculture Crop Problems: Pests, Diseases, & Growth Control*, please contact OFA at: 614-487-1117 • Fax: 614-487-1216 • ofa@ofa.org • www.ofa.org.

# It's Time to Talk About Profitability

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One of the most satisfying parts of my job is traveling around the country interacting with growers. It's a great way to keep a nose to the grindstone and a finger on the pulse of what's going on. Lately, discussions with fellow growers have had a frighteningly common theme: "I seem to be working harder and harder but making less and less." In my opinion, at no time in our industry's history, has concern over profitability been greater than we're sensing right now.

This concern has no demographic boundaries. Owners of small, medium, and large operations are all feeling the pinch. Southern growers and northern growers stand shoulder to shoulder in their concern over their businesses' health. It makes no difference whether you're wholesale or retail either; everyone's desperately searching for a way to assure a better bottom line.

Chances are, if you're running a floriculture operation, you're nodding your head, right about ... now. You're either nodding up and down, approving of this topic, or side to side, frustrated that your business is indeed experiencing anemic profits. Oh yes, and I'll bet that your lips tightened as your head nodded. Am I right?

## IS PRODUCTION THE PROBLEM?

Generally speaking, the decades of the '60s and '70s taught us how to be better growers. We put many theories

into practice in our greenhouses during this era. Among them are constant fertilization, environmental controls, sanitation, crop modeling, temperature manipulation, and growth regulator use.

One cannot point to production in and of itself as the culprit of diminishing profitability. We're all pleased as punch that we can grow plants with ease and dependability compared to earlier days. Some may argue, however, that making growing easier has created an oversupply of product in our marketplace.

If we grow more than we can sell, prices will fall, and profitability usually follows. This is one of the most basic laws of economics, the law of supply and demand. But is it this simple? Have we reached the limit on consumption of floriculture crops? Indicators tell us that we're still increasing the demand for our products, a very important sign.

Each of us has, at times, overproduced and felt the sting of the supply and demand sword. Most of us have experienced this at a very local level, our immediate marketplace. By cutting production numbers for the next season, we were able to balance the scale and manage the profit picture better.

## MARKETING AND MERCHANDISING

During the past two decades, we've seen a shift in where plants are sold. The maturing of mass market merchandising in floriculture has influenced the landscape significantly. As big box stores geared up to satisfy consumers' appetites for convenient, low priced floral products, traditional garden centers and retail growers were forced to learn how to niche

market. As the big boxes concentrated on moving impressively large numbers of heavy hitting crops such as poinsettias, mums, and Easter lilies, the traditional retail outlets shifted their focus to more unusual crops, cultivars, and container sizes to differentiate their product mixes.

The marketplace has settled down in recent years. As the dust began to settle, it was clear that big box stores had become major players in the market and smaller independents had carved specialty niches to assure their futures. Many agree that profitability is harder to maintain these days in part because of the tremendous pressure that mass merchandising brings to the table.

## COSTS AND PRICING

Years ago, it was sufficient to discuss cost analysis at grower meetings. Back then, prices were usually high enough to cover costs and leave a comfortable profit at the end of each season. But a free market economy encourages competition when prices and accompanying profits are attractive. Would anyone disagree that this was the case 20 years ago when mass marketers looked at the floriculture market as one of the next frontiers? As growers got better at growing, the supply of product increased which applied pressure to pricing structures. The only place for prices to go was down.

Now that we, as an industry, have made it into the era of mass merchandising, the marketplace seems to be settling down. Where 10 years ago independent operators cringed at the news that a big box store was coming to their town, today these same

business owners state that it may be the best thing that could have happened to them.

It's all coming down to one's philosophy on pricing. Yes, we have learned how to push our pencils to perform cost analyses. Some independents are taking their next step and learning that just because a plant costs so much to grow doesn't mean that it has to be sold for "so much plus a fixed percentage." There are many species, cultivars, sizes, and mixtures of plants that can be priced higher than the "cost plus percent" formula. These retailers are learning from customers and tuning in to the way they perceive plants. Those that customers perceive as having higher value should carry a higher price, regardless of what the cost analysis tells us.

## THE PROFIT EQUATION

Now back to reality for a moment. Generally, price increases have failed to keep pace with costs of production over the past decade, and the result is an ever-squeezing profit margin. Remember when we said earlier that many of us feel that we're working harder and harder while making less and less? We're living proof that the profit equation rules.

If we take the selling price of a pot of geraniums and subtract from that the cost of producing it, what remains is the profit. Each of us has a different threshold for profitability. Some of us can live with less, while others want more. More rules are applied in defining what an acceptable level of profitability is when looking to borrow money from a bank, insure the business, and hire employees.

In order to compare crops on an equal footing,

we generally try to base figures on square feet of production area rather than number of units grown. It's difficult to compare the profitability of two crops, say poinsettia and geranium, based on per unit costs and revenue. It's much easier to compare when the figures are translated into revenue and costs per square foot instead. This is where crop spacing comes into play. If you believe in giving your plants more space than your competition, you'd better be producing a large enough plant to charge enough more to compensate

for the lower production per square foot.

#### OFA'S 2002 REGIONAL SEMINAR TOUR

Based on the realization that growers are frustrated with declining profitability, OFA has chosen "Partnering for Profitability" as this year's regional seminar tour topic. Planning is underway; a three-stop tour will crisscross the United States in the fall. The day-long program will include three discussion topics: how to calculate revenue to help decide which crop product mix to put on one's benches, how to calculate

production costs of these items, and how to calculate profitability. One goal of the seminar is to help growers understand how to choose what they grow to achieve maximum profitability in their operations.

Not only will profitability be this year's regional seminar tour topic, but it will also assume next-in-line status as a future subject of our "Tips on Growing..." series. Due out at this year's 2002 Short Course is *Tips on Designing, Growing, and Marketing Mixed Baskets and Containers*. As soon as we clear this book

from our plate, we're ready to dig into *Tips on Managing Profitability in the Greenhouse*, which is scheduled for release at the 2003 Short Course.

More information on the regional seminar tour will be available in the upcoming months. Please contact me at peterkfes@aol.com or the OFA office if you and fellow growers in your region would like to be considered as one of the three seminar sites. As a member-driven association, we count on your guidance in our educational efforts.

OFA

## NEW OSHA RECORD KEEPING REQUIREMENT IN EFFECT

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OSHA has released the new record keeping forms that were required as of January 1, 2002. The new forms are the 300, 300A, and 301. These replace the current 200 and 101 forms. The new 300 form, Log of Work-Related Injuries and Illnesses, will replace the former 200 log. The new 300 form has been changed from the original version and takes out the column dedicated to Musculoskeletal Disorders (MSDs). Also, the column on Standard Threshold Shifts (STS) for hearing loss has been removed.

Claims dealing with MSDs are to be recorded under column 7, All Other Illnesses. The proposed changes in recording a change in the STS from 25dba to 10dba will not become effective until January 1, 2003.

The 300 form, Log of Work-Related Injuries and Illnesses, will be used to classify work-related injuries and illnesses, to record days away from work, and record job transfer on restricted days. This form is to be used for all OSHA recordable cases. The 300A Summary is a completely new form and is to be used to record all totals for each category on the OSHA 300 log. It also includes the average number of employees and total hours worked for that location. This form is the one that must be posted each year. The 301 Injury and Illness Incident Report replaces the current 101. Acceptable substitutes are allowed as long as they contain all of the information on this form. This form or the substitute must be completed for all cases that are required to be reported on the 300 log.

There are a number of other changes in the new record keeping requirements. The following is a list of the key changes:

- The summary 300A must be posted for three months instead of only one. The posting period will be February through April.
- Calendar days are to be used to record total days of lost time instead of actual workdays. A cap has been put on total recordable days of 180.
- An executive must sign the 300A form before it is posted.
- First aid cases are clearly defined, eliminating confusion in recording cases.
- It establishes what is are known as Privacy Cases. For these cases, the employee's name is not to be recorded. Instead, "Privacy Case" must be entered. For these cases, a separate confidential list of the names and case number must be kept.
- Requires employers to establish a procedure for employees to report injuries and illness and advise these employees how to do this.
- Gives employees and/or their representative access to the 300 log and the individual 301 Incident Report for their case.
- Provides exemptions for cases involving eating or drinking of foods or beverages, excessive programs, blood donations, mental illness, personal tasks outside work, personal grooming, motor vehicle accidents in parking lots, and symptoms arising on premises totally due to outside factors.

The new record-keeping requirement applies to all cases starting on or after January 1, 2002. Cases that happened in 2001 are still to be placed on the current OSHA 200 log and posted by February 1, 2002.

Record keeping forms, an outline of the changes, and the new forms are being sent to all OFA members. When you receive these, make good copies of the forms and place the guidelines in your Safety Policy Manual, and replace the current information in the OSHA 200 Log.

If you have any questions on record keeping or other safety related issues, please give me a call at 1-800-356-1274.

OFA

# GARDEN CENTER EMPLOYEE- TRAINING PROGRAMS

## (EXAMPLES FROM OHIO)

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It seems like flowers and plants are sold just about everywhere one turns these days. Kroger, Wal-Mart, K-Mart, Lowe's – do we need to go on? It's foolish to try to compete with those folks on pricing.

However, the tables can be turned on those goliaths. Make them compete with you on quality products and services, and remember that, as Mitch Renkow says in *Economic Trends Affecting Small and Home-Based Businesses*, consumers still demand quick and reliable service and good product selection. He also says that there is still a premium placed on a "personal touch" in the sales process.

Are your employees up to providing quick and reliable service and the "personal touch?" Do they make your customers feel like they are a member of your family? Can they advise your customers on the basics of horticulture: how to water, mulch, fertilize? Do they even know what the numbers in a 21-7-7 fertilizer mean? Can they recognize the most common insect and disease problems, and advise the customer on the best way to control them? Do they know their plant materials?

If you can't answer yes to these questions, then training is necessary. The next question is – how do your employees get the training/education they need to make sure your business prospers? There are some traditional programs directly targeted to training garden center employees, especially in sales and customer service. However, as mentioned previously, employees must also be knowledgeable in horticultural topics in order to earn the trust and respect of the customers.

Think outside the box! Training doesn't have to be limited to programs that are titled or promoted as "garden center training" programs. There are many sources for this type of information. Ohio State University (OSU) Extension is just one. To get a sampling of what Extension provides, we asked our colleagues in Ohio and some surrounding states to report on programs they have offered or will offer that would benefit garden center employees. Following is a summary of those reports.

Pam Bennett and Gary Gao, horticulture agents in Clark and Clermont counties, respectively, offer a one-day perennial school. They bring in top-name speakers, and the topics vary throughout the day. Why not send your perennial department manager or specialist to one of these programs?

Another program opportunity for garden center employees is the Home Gardener Series (HGS) offered by Master Gardener volunteers. In Ohio, Franklin, Clark, and Cuyahoga counties offer this type of program. The HGS classes are held during the winter for backyard gardeners and cover a wide range of topics. Send your garden center employees to this type of program for two reasons. The first is obvious – for personal development and training in order to be capable of helping your customers. The second is not so obvious; send them to learn what the backyard gardeners' interests and needs

are. They can learn much just from observing the participants in the classes. Have the employee ask questions of the participants. Where do you shop? What is your biggest need in the garden? What products do you wish you could find on the market?

Tim Rhodus, Extension specialist, OSU Department of Horticulture and Crop Sciences, noted that garden center employees would benefit from the distance education course, "Introduction to Horticulture." It is a four-credit hour college course that lasts 10 weeks. All of the information and activities are completed via the Internet. The next starting date is April 1. Non-OSU students and staff can enroll through the OSU office of continuing education. For more information on the course see: <http://hcs.osu.edu/hcs150>. For more information on continuing education see: <http://www.continuinged.ohio-state.edu/> and click on the link for credit programs.

A wide variety of educational programs are also conducted for the state's regional flower growers association meetings.

Don Smeyers, horticulture agent, University of Kentucky Cooperative Extension Service, Kenton County, reported that a garden center was permitted to send employees to Master Gardener training in the past, but in the last few years that program has been restricted to volunteer development. He does conduct a landscape practices program. It mostly attracts landscapers and landscape crews, but some garden center employees also attend.

These samples of educational programming are by no means the only ones offered through OSU Extension. Many others are held across the state and region. For more information on other training classes in your county and state, contact your local Extension office.

There are also numerous other educational resources provided by Extension. For example, the "Buckeye Yard & Garden Line" (<http://bygl.osu.edu>) is an outstanding source of timely information on insect and disease problems, lawn care, and landscaping. It is put together through a conference call of agents and specialists across the state and published weekly from April through September.

### FIND LOCAL RESOURCES

Employee training-related programs are usually available in every state via Cooperative Extension, land grant universities, regional horticulture associations, and local consultants. Start by checking with your state Extension agents to see what programs they have to offer.

Here are some additional educational resources that are available on the Internet:

- OSU Department of Horticulture and Crop Science, "Horticulture and Crop Science in Virtual Perspective" (<http://hcs.osu.edu/>);
- Horticulture and Crop Science in Virtual Perspective, "WebGarden" (<http://webgarden.osu.edu>);
- Within the "WebGarden" area, you can find the "Plantfacts" searchable database, which has more than 20,000 pages of factsheets from 46 different universities. The direct address for Plantfacts is <http://plantfacts.osu.edu/>.

Want to keep an advantage on your competitors? One way to do this is to keep your employees trained. Not only will it help your individual business, it will ultimately help the floriculture industry.

**OFA**

# Kip o r n e r

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Professor Jim Metzger has stepped down from his position as the D.C. Kiplinger Chair of Floriculture in the Department of Horticulture and Crop Science at The Ohio State University (OSU), Columbus, Ohio, effective January 1, 2002. Dr. Metzger, who has been the Kiplinger Chair since 1994, will be taking on new activities in the teaching program at OSU as well as continuing his research program. The Department of Horticulture and Crop Science and the College of Food, Agricultural and Environmental Sciences at OSU are working to develop future plans for the D.C. Kiplinger Chair, in consultation with the Kiplinger Chair Advisory Committee.

Metzger was the latest in a distinguished group of floriculture professionals to work with the D.C. Kiplinger Chair program. The Kiplinger Chair in Floriculture honors Dr. D.C. Kiplinger, professor of floriculture, for his contributions as a teacher, researcher, and Extension specialist.

## KIP'S LEGACY

Kiplinger served 40 years as a faculty member in the horticulture department at OSU and 25 years as secretary-treasurer of the Ohio Florists' Association. His contributions in floriculture education and commercial floriculture are recognized worldwide. After Kiplinger's death in 1977, OFA provided the leadership and rallied support for the endowment campaign

that established the D.C. Kiplinger Chair in Floriculture at OSU.

The Kiplinger Chair was the first floriculture chair in the United States and the first chair in the College of Agriculture at OSU. It was funded by businesses, foundations, and individuals to support research and educational activities for floriculture excellence. Gifts were received from the Ohio Florists' Association, its members, the Ohio State Floriculture/Landscape Horticulture Alumni Association, friends of D.C. Kiplinger, and other interested groups, agencies, and organizations.

More than \$700,000 in gifts and pledges was received to fully endow the fund, after which the annual interest income was available "to be used to provide salary and program support for the work of a distinguished scholar and researcher in floriculture."

The Kip Chair is intended to be a continuing position of influence in the floriculture industry, and the chairholders are looking for:

- A record of significant achievements in the field of floricultural education and research;
- Personal qualities which inspire, instruct, and motivate students toward careers in the floriculture industry, teaching, and/or research; and
- The ability to work effectively with the state and national floriculture industries.

## ADVISING THE KIP CHAIR

In 1980, the Dean of the OSU College of Agriculture appointed a committee of seven trustees to oversee and plan for the effective use of the Chair. Three representatives from industry, three from the academic commu-

nity, and the chair of the Department of Horticulture served for the next four years, establishing policy and guidelines for the functioning of the Chair. In the following years, subsequent department chairs and others served as appointees.

The current Kip Chair Advisory Committee includes: Committee Chair Steve G.P. Nameth, OSU Department of Plant Pathology, Columbus, Ohio; Jim Corfield, J. Corfield & Associates, Geneva, Illinois; Roger Feist, West Hills Greenhouses, Inc., Cincinnati, Ohio; Dennis Kirven, Ohio Florists' Association, Columbus, Ohio; Hal Kneen, OSU Extension, Pomeroy, Ohio; Peter Konjoian, Konjoian's Floriculture Education Services, Andover, Massachusetts; Justin Marotta, Possum Run Greenhouses, Bellville, Ohio; Stephen Myers, OSU Department of Horticulture and Crop Sciences; and Jack Schmidt Jr., Timbuk Farms, Inc., Granville, Ohio. This committee meets regularly to discuss projects and plans for the continued effective impact of the D.C. Kiplinger Chair on the floriculture industry of the state and nation.

This program has been handled several ways over the years. Since its inception, four scholars have held the Kiplinger Chair position. H. Marc Cathey, formerly USDA, Beltsville, Maryland, was the first to serve in 1980-81. His work emphasized bringing significant impact to the field of research for floriculture. John G. Seeley, formerly Cornell University, Ithaca, New York, served in 1984-85. Seeley's major role was to guide work on an operations management project for commercial floriculture greenhouses.

Harold F. Wilkins, Minnesota, retired, then served as the third Kip Chair

in 1992-93. James D. Metzger, formerly USDA, Fargo, North Dakota, served from 1994 to 2001. Each of these scholars has perpetuated excellence in floriculture knowledge through their research, teaching, and industry outreach efforts.

In addition, early recommendations for the Kiplinger Chair called for expanded research in production and distribution of high quality floral products. Postproduction care and handling guides on bedding plants, cut flowers, flowering potted plants, and foliage plants were subsequently planned and produced through the Kiplinger Chair position. This was handled by four project leaders, appointed in 1986 for their background and experience with postharvest handling of a specific group of plants. The four individuals were Terril A. Nell – flowering potted plants, Allan M. Armitage – bedding plants, Thomas M. Blessington – foliage plants, and John N. Sacalis – fresh cut flowers. Each individual completed a literature search for all research results worldwide related to the postharvest performance and care and handling practices for their respective flower types, and then wrote a manual on care and handling. Marc Cathey also coordinated this work.

## MOVING ON

The basic and applied research and instruction programs that have been developed through the D.C. Kiplinger Chair in Floriculture have been vital to the floriculture industry. D.C. Kiplinger's commitment to excellence in floriculture will continue as the program is reviewed, and the advisory committee determines how to handle the next phase of this outstanding program.

OFA

# A Time for Change?

**Joe Boarini**  
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The Ohio Florists' Association has come a long way since our beginning as the Ohio Flower Growers and Retailers Association. In the beginning, we were basically an alumni association for the horticulture school at The Ohio State University (OSU). Many of the OSU graduates wanted a vehicle for life-long learning and fellowship and the rest, as they say, "is history." Since our formation, we have grown to serve members in every U.S. state and 25 countries around the world. Our Short Course and Trade Show has more than 10,000 registered attendees every July, and our outreach education endeavors are becoming more popular every year.

Times change and life goes on ... For several years OFA has danced around the discussion of our name and whether or not it should be changed. I would like to tackle the discussion head-on in the coming months. Because we are a member-driven organization, I feel it essential to begin the discussion with our committees. Recently, we began those committee discussions and felt it was important to let the membership understand the process. All of the committee chairs have been asked to discuss our name and its current appropriateness. By November 2002, the following questions will have been discussed and answered:

1. Does our name accurately reflect who and what we are without lengthy dis-

ussion? If our name does not represent us accurately, does it hinder our growth?

2. Are we perceived as a state organization with national and international members?

3. Are we perceived as a national organization with international members providing state association benefits to a portion of our membership?

4. Should the Board of Directors seriously consider a new name for the Ohio Florists' Association?

5. If the answer to question #4 was yes, do you have any suggestions for a new name?

Our initial goal is to gather the input from committees no later than July (with the exception of committees that meet only in the fall) and begin discussion at the

Board of Directors' meetings in July and November 2002. If the decision is made to make no change, then we will put this baby to bed for a few more years and move on. If the decision is made to make a change that requires an update to the constitution and by-laws, then we will proceed with a vote of the membership with the intent of announcing the results at the July 2003 Short Course. If the decided change is simply a re-branding, it may not require a membership vote and could take effect early 2003.

The discussion thus far has been exciting and very positive. If you would like to voice your opinion, contact a board member or myself. We welcome any comments or questions you have regarding this most important issue.

OFA

## OHIO FLORISTS' ASSOCIATION MEMBERSHIP REPORT 12/31/01

Association Category	Ohio	Out of State	Foreign	Total	
Active: Grower (B, C, D)	345	1,309	116	1,770	48%
Active: Non-grower (A)	277	655	117	1,049	28%
Associate (AS)	187	572	39	798	22%
Honorary Members (H) & Affiliates (F)	37	44	3	84	2%
<b>Total</b>	<b>846</b>	<b>2,580</b>	<b>275</b>	<b>3,701</b>	
	<b>23%</b>	<b>70%</b>	<b>7%</b>		



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