

ofa Bulletin

an Association of Floriculture Professionals

Controlling Black Root Rot of Bedding Plants: Keeping Plants Stress-Free is the Key

by Stephen Nameth

Black root rot (BRR) is a common and destructive fungal disease on a variety of greenhouse bedding and pot crops. The disease is widespread, having been reported on many different hosts including poinsettia, fuchsia, pansy, vincas, petunia, and calibrachoa. The fungus that causes BRR is capable of living in soils as a saprophyte (without causing disease) and surviving in soil, soilless media, and dust for years via tiny, thick-walled spores called chlamyospores. Plants

that are stressed are more susceptible to infection, making stress prevention key to controlling the disease.

Symptoms

Black root rot can be difficult to diagnose in the early stages of disease development and can be confused with other common diseases and disorders. Above-the-media symptoms include yellowing, symptoms of nutritional deficiencies, stunting (Figures 1a and 1b, page 6), and under severe conditions, wilting and the eventual

death of the plant (Figure 2, page 7). Sometimes, plants affected with BRR may have black stem lesions at or near the soil line; however, stem lesions are rare in greenhouse crops. Black stem lesions are more commonly associated with plants infected with Impatiens Necrotic Spot Virus or advanced cases of Pythium root rot. Symptoms of BRR may sometimes be confused with those of Pythium root rot; however, Pythium usually attacks roots from the ends or tips, causing a soft, brown

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How to Make Your Store the Preferred Place to Shop

by Kathleen Kelley

Retail businesses need to differentiate themselves from the competition while building and retaining a customer base. Something your business possesses or offers should keep clientele interested and coming back to shop for more. Even if you have the competitive edge now, you still need to work at maintaining your position. According to Fred Crawford and Ryan Mathews, who wrote "The Myth of Excellence" (*Crown Business*, 2001), there are five factors a business must

develop to be relevant in a consumer's mind: access, experience, price, product, and service.

Crawford and Matthews stress that the goal is not to be the best in each of these categories, but to be superior in two (primary and secondary attributes) and satisfactory in the other three. In essence, it is as if you are taking a college course. During the semester, the instructor will administer five tests of which you need to get A's on two and get satisfactory grades on the other three to pass the class. So, it

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OFA Mission Statement

To support and promote floriculture professionals through lifelong learning, career enhancement, and public awareness.

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America in Bloom ... Planting Pride in Your Community

This year, 43 cities are participating in the America in Bloom beautification contest. From June to August, professionally trained teams of judges will travel the country evaluating each community in eight criteria: floral displays, landscaped areas, urban forestry, turf and groundcover areas, environmental awareness, tidiness, community involvement, and heritage conservation.

Mark your calendars now for the annual symposium and awards ceremony will be held this September 18-20 in Chicago. AIB is teaming with the Chicago Park District to present a first-rate experience for everyone. This is something you don't want to miss!

How Do I Get My Community Involved?

While cities can no longer register to participate in this summer's contest, it's never too early to begin planning for next year's program. Every community of every size can participate in America in Bloom. Here is an easy-to-follow checklist to get your community actively involved in America in Bloom.

- Get approval of the mayor, city council, or responsible municipal department.
- Organize a local AIB contest committee comprised of representatives from businesses, municipality, and private citizens.
- Review the judging criteria and documents received from AIB upon registration. You'll want to create a notebook of year-round events in the community that relate to the evaluation grid criteria. Develop plans for recording ongoing events. Develop plans for those grid areas the community is not addressing.
- Spread the word about the competition. Get the community press involved to raise excitement throughout the entire process.
- Raise funds to assist community group efforts and to cover costs of participation, judges' visit, and attending national awards symposium.
- Review logistics of judges' visit, events, people to meet, and places to experience.

- Make plans to attend the educational and awards symposium in the fall.
- Make it fun and enjoy the journey.

2003 Participating Cities

Less than 5,000 (population)

Allegan, Michigan
Amelia, Ohio
Elfin Forest, California
Flemington, New Jersey
Lavonia, Georgia
Lewes, Delaware
Sequim, Washington

5,001-10,000

Cadillac, Michigan
Milledgeville, Georgia
Montgomery, Illinois
Oberlin, Ohio
Silverton, Ohio
Warwick, New York
Waterloo, New York
Williston, Vermont

10,001-15,000

Brecksville, Ohio
River Edge, New Jersey
Washington Court House, Ohio

15,001-20,000

Berea, Ohio • Sylvania, Ohio

20,001-25,000

Batavia, Ohio
Derry Township-Hershey, Pennsylvania
Rocky River, Ohio
Willoughby, Ohio

25,001-50,000

Bartlett, Tennessee
Glen Ellyn, Illinois
Lake Oswego, Oregon
Sandusky, Ohio
Tupelo, Mississippi
Westerville, Ohio

50,001-100,000

Encinitas, California
New Bedford, Massachusetts
Reston, Virginia

100,001-300,000

Akron, Ohio • Des Moines, Iowa

500,001-1 million

Boston, Massachusetts
Indianapolis, Indiana
Monroe County, New York

Over 1 million – Columbus, Ohio

International Challenge

Camp Hill, Pennsylvania and Viking, Alberta, Canada
Fayetteville, Arkansas and Sherwood Park, Alberta, Canada
Kalamazoo, MI and Edmonton, Alberta, Canada
Westlake, Ohio and Kincardine, Ontario, Canada

Is Your Greenhouse Business Growing Green (\$\$) or Red (Ink)?

by Robin Brumfield

Do you really know for sure whether or not you are making money, or do you wait for your accountant to tell you? Profit for any business can be calculated by the simple formula: profit = number of units sold x (sales price per unit – total costs per unit). Growers know how many units of a specific crop they sell at a given price. They also know the profitability of their business from their income tax records at the end of the year. However, most growers produce many crops. Thus, the third vital component of the profit equation, the cost of producing an individual unit, is often not known. Determining the profitability for each crop requires knowledge of its production costs. The process of assigning production costs to each crop and subsequently calculating the profit of each crop is called cost accounting.

I will describe here the computer program Greenhouse Cost Accounting, distributed by Rutgers University Cooperative Extension, which can be used on microcomputers with a Windows operating system using Microsoft Excel. The software enables users to perform cost accounting and determine the profitability of greenhouse crops. The information can be used by managers to analyze various production, financial, and marketing strategies. The Greenhouse Cost Accounting program uses cost information growers already have. Much of the data needed is typically found on income statements, and the rest is direct cost information for each crop. From these inputs, the program allocates as many costs as possible to individual crops. The remaining unallocated costs are assigned to each crop on a per-square-foot-week basis. The computer output provides information on

costs and returns on a per-crop, per-unit, and per-square-foot basis. It also provides an income statement showing total costs, allocated costs, and unallocated costs. The output can aid the manager in making decisions about pricing, reducing unprofitable production, controlling costs, and increasing sales of profitable crops. The program also can be used by greenhouse management classes or for Extension workshops. You can also perform the same kind of analysis yourself by hand or by developing your own spreadsheet.

The costs incurred in the greenhouse business can be grouped into two categories: variable and overhead costs. Variable costs are costs that change with the level of production and can usually be allocated to a particular crop. Examples of variable costs are the costs of petunia seeds and bedding plant flats; both relate specifically to petunia production. They are part of the total costs per unit given in the profitability equation above. Overhead or fixed costs are those costs that are incurred regardless of the level of production and are common to all crops. These costs include depreciation of the greenhouse structure, equipment, and other facilities and costs such as interest, repairs, insurance, taxes, and salaries of overhead personnel (i.e. the manager, salespeople, growers, secretaries, bookkeepers, etc.). The total cost of production is the sum of variable and overhead costs.

A business owner or manager may not know the various costs of producing a specific crop. For example, the *total* cost of seeds is usually known. However, the cost of petunia seeds may be unknown. If the cost of petunia seeds is known, enter it as a variable cost for producing petunias; if it is not known, enter a zero. You can treat variable costs that you can't

assign to a particular crop the same way you would overhead costs. The program will then assign the cost of seeds along with other unassigned costs on a per-square-foot-week basis.

Inputs. The program has two sections: the input section and results section. The input section is divided into two parts. The first part includes values from the income statement and space usage information. Table 1 (page 4) is an example of input from the income statement for a 20,000-square-foot greenhouse.

The second part involves information on the cost of producing each crop (Table 2, page 5). The user supplies the name of each crop produced; the costs of labor, seeds or plants, containers, growing medium, fertilizer, chemicals, and tags; and other direct costs associated with the crop. For example, the cost of labor to produce petunia flats is \$3,385. However, most managers probably do not know the cost of labor devoted to each crop. If the labor cost of producing petunia flats is unknown, enter \$0, and the program will assign labor costs on a per-square-foot-week basis.

You also need to enter the number of units started, the space devoted to each unit, the weeks needed to grow the crop, the percent sold, and the price per unit – items that most managers know for each crop. If the same crop is sold at more than one price, then that crop may be treated as two or more crops. For example, perhaps 20 percent of petunia flats are sold at \$6 per flat to customers who buy more than 100 flats, and 80 percent were sold at \$6.50 to customers who buy less than 100 flats. Two entries can be made showing 4,000 units started of "petunia flats-2" at \$6. Total costs can be allocated by the user on

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Is Your Greenhouse Business Growing Green (\$\$) or Red (Ink)?

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an 80 percent/20 percent basis. Another option is to enter the average price for petunias.

Results. We have calculated overhead costs, costs per crop, and costs per unit (flat or pot) (Table 3). The costs per unit include the costs for labor, seeds or plant, container, growing medium, fertilizer, chemicals, tags, other direct costs, total direct costs, overhead costs, loss of unsold plants, total costs, sales price, and profit or loss. The costs for each crop include: sum of direct costs, square feet per crop, square foot-weeks per crop, total crop sales, total crop costs, profit (loss) per crop, profit (loss) per unit, and profit (loss) per square foot-week. Totals for the entire business also are calculated for each of the above categories.

In the example, poinsettias are unprofitable, and the other crops are profitable (Table 3). Marigold flats are the most profitable crop per unit, and petunia flats are the second most profitable. In the cost-per-crop section of Table 3, the overhead cost per square foot-week is \$0.267.

Differences in profit pictures exist between cost per square foot-week and cost per unit. Marigold flats are the most profitable crop per unit, but geraniums in 4-inch pots are the most profitable crop per square foot-week. Geraniums in 4-inch pots have a lower profit per pot, because they are sold at the lower price per unit than the marigold flats. However, geraniums in 4-inch pots are the most profitable crop per square foot-week because of more efficient use of space. Returns per square foot-week of bench space may be the most informative way of



comparing profitability among crops because of differences in use of space.

As shown in this hypothetical example, knowledge of the profitability of each crop helps managers make production and marketing decisions to improve their businesses.

A web version of this program is available at: <http://aesop.rutgers.edu/~farmmgmt/Green-House/GreenhouseInteractiveForm.html>

Or contact Dr. Brumfield at Brumfield@aesop.rutgers.edu for information to order an Excel version of the program.

Table 1. An example of the first input screen, which includes income statement and space usage information, from the Greenhouse Cost Accounting Program.

Input Section	Values from Income Statement
Sales	\$182,610.00
Direct Costs	
Seeds, cutting, or plant	19,092.00
Pots or containers	9,490.00
Growing medium	9,150.00
Fertilizer and chemicals	1,130.00
Tags	3,788.00
Other	0.00
Overhead salaries (including benefits)	37,384.00
General wages (including benefits)	12,111.00
Utilities	
Heating fuel	20,000.00
Electricity	3,350.00
Telephone	1,480.00
Water	0.00
Overhead	
Depreciation	16,750.00
Interest	16,800.00
Repairs	3,725.00
Taxes	550.00
Insurance	3,240.00
Advertising	485.00
Dues & subscriptions	100.00
Travel & entertainment	345.00
Office expense	314.00
Professional fees	550.00
Truck expense & equipment rental	7,150.00
Land rental	2,000.00
Contributions	18.00
Bad debts	925.00
Miscellaneous	550.00
Greenhouse area	20,000 ft ²
Greenhouse space used for production (e.g. enter 75% as 75, 125% as 125)	75%
Weeks in operation (52 if a full year)	29

Table 2. An example of input section 2, which includes information on specific crops, from the Greenhouse Cost Accounting Program.

	Petunia Flats	Marigold Flats	Geranium Flats	Geranium 4-inch Pots	Poinsettia 6-inch Pots	TOTAL
Labor	\$3,385.00	\$2,031.00	\$3,385.00	\$1,240.00	\$2,070.00	\$12,111.00
Seeds or plants	\$1,320.00	\$792.00	\$7,920.00	\$660.00	\$8,400.00	\$19,092.00
Containers	\$2,900.00	\$1,740.00	\$2,900.00	\$600.00	\$1,350.00	\$9,490.00
Growing medium	\$2,750.00	\$1,650.00	\$2,750.00	\$500.00	\$1,500.00	\$9,150.00
Fertilizer and chemicals	\$155.00	\$90.00	\$235.00	\$200.00	\$450.00	\$1,300.00
Tags	\$823.50	\$494.10	\$823.50	\$1,647.00	\$0.00	\$3,788.10
Other direct costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Number of units started	5,000	3,000	5,000	10,000	15,000	38,000
Square feet per unit	1.64	1.64	1.64	0.11	1.00	---
Weeks to grow	8	6	13	6	15	---
Percent sold	0.98	0.98	0.98	0.95	0.95	---
Sales price	\$6.50	\$6.50	\$10.00	\$1.20	\$5.00	---

Table 3. An example from the Greenhouse Cost Accounting Program of output information per units and per crop.

	Petunia	Marigold	Geranium	Geranium	Poinsettia	TOTAL
Cost per unit						
Labor	\$0.68	\$0.68	\$0.68	\$0.12	0.14	---
Seeds or plants	\$0.41	\$0.26	\$1.58	\$0.07	\$0.56	---
Containers	\$0.68	\$0.58	\$0.58	\$0.06	\$0.09	---
Growing medium	\$0.25	\$0.55	\$0.55	\$0.05	\$0.10	---
Fertilizer and chemicals	\$0.03	\$0.03	\$0.05	\$0.02	\$0.03	---
Tags	\$0.16	\$0.16	\$0.16	\$0.16	\$0.00	---
Other direct costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	---
Total direct costs	\$2.27	\$2.27	\$3.60	\$0.48	\$0.92	---
Overhead costs	\$3.50	\$2.63	\$5.69	\$0.18	\$4.01	---
Loss of unsold plants	\$0.12	\$0.10	\$0.19	\$0.03	\$0.26	---
Total costs	\$5.89	\$4.99	\$9.49	\$0.70	\$5.18	---
Sales price	\$6.50	\$6.50	\$10.00	\$1.20	\$5.00	---
Profit (loss)	\$0.61	\$1.51	\$0.52	\$0.50	(\$0.18)	---
Costs per crop						
Direct costs	\$11,335.50	\$6,793.50	\$18,015.00	\$4,847.00	\$13,770.00	\$54,760.00
Square foot	8,200	4,920	8,200	1,100	15,000	37,420
Square ft-wk	65,600	29,520	106,600	6,600	225,000	433,320
Overhead per sq. ft-wk	0.267	0.267	0.267	0.267	0.267	0.267
Sales	\$31,850.00	\$19,110.00	\$49,000.00	\$11,400.00	\$71,250.00	\$182,610.00
Totals costs	\$28,851.66	\$14,680.27	\$46,480.51	\$6,609.50	\$73,855.16	\$170,477.10
Profit (loss) per crop	\$2,998.34	\$4,429.73	\$2,519.49	\$4,790.50	(\$2,605.16)	\$12,132.90
Profit (loss) per unit	\$0.61	\$1.51	\$0.51	\$0.50	(\$0.18)	---
Profit (loss) per sq. ft-wk	\$0.05	\$0.15	\$0.02	\$0.73	(\$0.01)	---

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Controlling Black Root Rot of Bedding Plants

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rotting as it progresses up the root into the stem. Oospores of *Pythium* can be seen in the infected roots with a microscope. BRR, however, begins by attacking the middle of the root and forms small, black cankers (Figure 3). The BRR cankers can be seen relatively easily by washing roots free of growing media and then viewing them carefully with a 10X or a higher power hand lens. A plant disease diagnostic lab should be consulted if you suspect black root rot. A diagnostic clinic can confirm the presence of the pathogen and give recommendations about what control methods should be initiated. Be sure and tell them you think BRR may be involved so the lab will examine the roots through a microscope. If the pathogen is present, black, barrel-shaped chlamydospores will be easily seen (Figure 4). The clinic or lab may also culture the fungus from the tissue. Since the pathogen grows slowly onto the culture plate and timely diag-

nosis is important, culturing is rarely done in a diagnostic lab. The presence of the thick-walled resting spores in the roots is enough positive evidence for a sound diagnosis.

Causal Fungus and Disease Development

Black root rot is caused by the fungus *Thielaviopsis basicola* (TB). As mentioned, the soilborne fungus is very common and widespread. It has a very wide host range and affects many other hosts besides greenhouse floral crops. These include many woody ornamentals and vegetable crops such as holly and cauliflower. *Thielaviopsis* can spread between greenhouses or between crops within a greenhouse in many ways. Long distance spread between greenhouses occurs via the movement of infested soil, media, pots, or plant material. Spread within the greenhouse takes place via splashing water or airborne spores in dust.

Bringing in infected plant material, media, or pots are not the only ways your crop can get black root rot. *Thielaviopsis* also has the potential to enter

a greenhouse via wind-blown dust from outside. Operators of greenhouses located in areas where building construction or agronomic activities such as plowing or field cultivation occur should be very careful not to allow dust from these activities to enter the greenhouse.

Once within a greenhouse, there are many situations that can result in the pathogen becoming a long-term resident. As mentioned, *Thielaviopsis* can grow and reproduce as a saprophyte and its saprophytic nature (can survive in soil and debris as a nonpathogen) may allow it to continue to grow, spread, and survive on many plants and plant debris in the greenhouse.

Thielaviopsis produces resistant “resting” spores in tremendous numbers (Figure 4). These spores can be splashed about or blown about in dust in the air. They will be present on flats, pots, or trays that may be brought into a work area for reuse. In addition, the pathogen produces a second type of spore that is spread by splashing water. It may be the spread of these small spores that allows the disease to develop so quickly once it gets started. All in all, the BRR pathogen is well suited to becoming a permanent, though unwelcome, resident in your greenhouse.

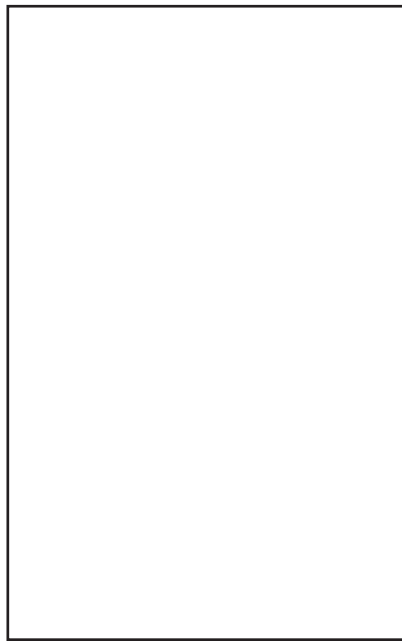
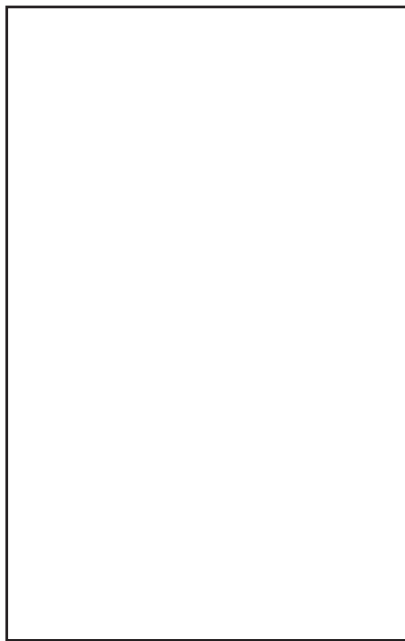
Disease Management and Control

Avoid Plant Stress:

The #1 Method of Control

TB is considered an opportunistic pathogen. This means it can survive as a saprophyte in the soil and on debris. However, once it comes in contact with a host plant under stress, the saprophyte can take this opportunity and aggressively attack and infect the stressed host.

Almost any factor that stresses the host plant can lead to further parasitic development of this disease. On the other hand, if the disease is identified early on, correcting the factors causing the stress will allow infected plants to “outgrow” the disease and eventually recover. Again early detection is key.



Figures 1a and 1b. Black root rot-infected (a) vs. healthy (b) pansies. Note subtle differences in size, vigor, and color. Infected plants are not wilted; they just appear “sick.”

What types of stresses would predispose a host to infection by TB? Plants grown under conditions that are too cool or too warm for a particular crop are often subject to this disease. For instance, growing violas too warm or petunias too cool may predispose them to infection. Nutritional

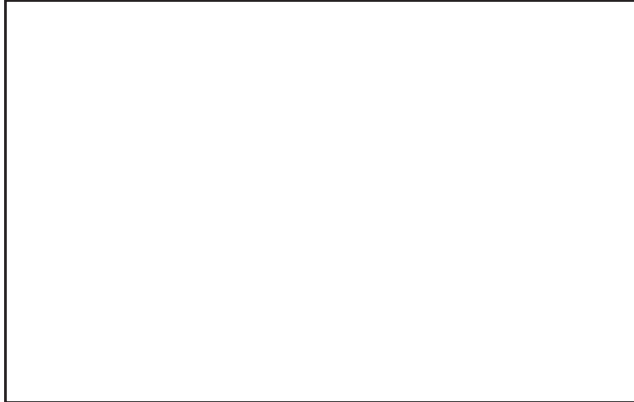


Figure 2. Several black root rot symptoms associated with pansies grown on concrete floor. Note: plants were stressed due to a low spot in the floor which held excessive water.



Figure 3. Roots infected with *Thielaviopsis basicola*. Note the evidence of random infection along the root. Pythium-initiated root rot would start at the root tip and work its way up the root. This can be observed with a good 10X hand lens.



Figure 4. Presence of thick-walled resting spores of *Thielaviopsis* in the roots of an infected plant.

imbalances are frequently associated with disease development. Excess ammonia nitrogen appears to be particularly troublesome for pansy growers dealing with BRR. Growing media with a pH above 5.5 to 6.0 is also conducive to BRR development. Growing calibrachoa at too high a

pH will predispose this susceptible host to an onslaught of TB.

A well-drained medium provides an environment favorable for the seedling and somewhat less favorable for the pathogen. Carefully executed watering practices are very important. When the medium is irrigated thoroughly and less often, conditions at or near the surface of the medium tend to remain slightly drier and are less favorable for growth of the pathogen. When producing plugs, plug trays must be kept evenly moist and sufficiently warm to enable seed to germinate rapidly and seedlings to emerge promptly.

Careful attention to the details of water relations, media pH, soluble salts, and temperature is the key to growing a good crop and essential in preventing BRR.

Sanitation

Thielaviopsis is well adapted to survival in the greenhouse. Some relatively simple sanitary practices are crucial for controlling this disease. Do not reuse containers or trays that housed plant material infected with BRR the previous year. Do not create dust, especially when the dust can settle on piles of growing media nearby. Disinfesting potting media will eliminate the organism and should be done if there is any topsoil or sand to be used in the growing media. Topsoil and sand are “guaranteed” to contain BRR-resting spores. Sanitize benches when possible with a good disinfectant such as Green-Shield, Physan, or ZeroTol. These products are formulated to inactivate the resting spores of BRR.

Chemical Controls

The use of chemical fungicides should be considered as a last resort when dealing with BRR. Fungicide drenches should be considered only when all else has failed and you are trying to save your crop. There are some very good chemicals with efficacy against BRR. Applications at labeled rates with products such as Cleary's 3336, Banner MAX, and Terragard will be very effective in controlling BRR; and if the disease has not progressed too far, many infected plants can recover and be saved.

In Summary

As with most plant diseases, the best control is prevention and BRR is no exception. Paying very close attention to the horticultural conditions that are best for the plant is imperative. Do this, and it will assure the plant is stress-free; and a stress-free plant is less likely to be a host for this destructive and persistent disease.

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How to Make Your Store the Preferred Place to Shop

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is not necessary for you to completely ace the course, but you must do very well on the two subjects you completely understand and do your best on the other three (which from time to time you will need a refresher course to completely understand).

For a retail business, it can translate into having superior service (hiring and retaining a knowledgeable sales force) as your primary attribute, and accommodating your customers with the access they need to your product (having reasonable business hours or a prime business location) as a secondary attribute. Even when you master these two attributes, you still could lose customers to competition if your product is substandard, your prices are not reasonable, or your customers do not have some sort of experience during their shopping excursion. The same logic applies for a business that employs knowledgeable sales associates and stocks the finest product available. The business will still need to create an experience, have reasonable prices, and be accessible.

It is a matter of balance. Ask yourself, "What two areas do I excel in and what three areas should I (or could I) satisfactorily tackle?" You can ask yourself, but also use some consumer research to find out what the experts – your customers – think.

With everyone who walks through your door, you have the opportunity of learning about their needs and if you are meeting those needs. Do you carry the product they are looking for (product attribute)? Have your employees been helpful (service attribute)? In addition, ask about their gardening interests and what they hope to accomplish next year (to help create experiences).

To better understand who filled out your survey, ask participants several

questions including their zip code (how far do your average customers travel to shop at your store?), how much (in dollars) do your customers spend on an average visit to your store, and how often do they shop at your store? What other retail establishments do they shop, and what can they find there that is not available from you? Don't just include your best customers; ask everyone who enters your store. First-time shoppers may reveal clues about your accessibility or prices you charge that loyal customers have less of a concern about. Better yet, consumers who do not shop at your store, but logistically could because of proximity, can disclose important clues in comparison with the other retail outlets at which they choose to shop.

As you assess your primary and secondary attributes, take a look at businesses in other industries that are successful. Is there anything you can learn by visiting a grocery store, an automobile parts counter, or a hotel where you can glean ideas to make your business more prominent in the eyes of the consumer? It really is amazing what you can see and learn when you simply take a look around.

For motivation, consider some of the following ideas. Although not all ideas will work for every business, certain ideas can be implemented or adapted. Decide for yourself what you can realistically do, and chart customer response to determine which effort worked and which didn't.

Access

Access includes not only location, but the ability to get the products consumers need, the ease at which they find the product in your store, and how easy it is to get product information from your sales staff. If a customer asks for your help in finding and purchasing a certain product, will you do your best to find what they need? Certainly, this would be a concept that not all of your competitors have implemented. How is your store organized?

Can customers find products easily? Are products arranged so they fit within categories such as "shade-loving" plants or "perfect for full sun?"

Experience

According to Crawford and Matthews, experience is how customers feel about themselves after their interaction with a business. After entering an appliance store and hearing the beat of the music from CD players and viewing the 65-inch projection televisions, do you feel transformed as if in a night club or sports bar watching the game? Or have you ever shopped for perfume in a small boutique with soft lighting, velvet curtains, and stools covered in plush fabric and felt as if you were in downtown Paris? Experiences such as these help create a lasting impression for consumers who want to feel as if they are not only purchasing a product, but are in the right location to do so. A consumer who purchases a shrub from a local hardware store constructed with metal pipe and chain-link fence will certainly have a different experience than if they purchased the plant from a garden center with soft music playing, fountains running, and patio furniture arranged on a deck surrounded by complementary landscaping. While sitting back in a chaise-lounge, your customers can start to dream about what they will purchase during their visit to recreate the feeling in their own backyard.

Price

Reduction in pricing or competitive pricing includes incentives. Being creative with your incentives can help instill that you want your customers to enjoy shopping at your store. Develop calendars that invite customers to take advantage of discounts on certain plant materials and supplies on specified days of the month. Allowing customers to take 20 percent off all pink flowering perennials every Wednesday in June can help with sales. Offering discounts when customers bring a friend to your store is another way to

develop interest. Just as airlines have frequent flyer programs, develop your own frequent buyer program. Ask your customers to sign up for your monthly newsletter, or reward your customers for participating in a survey or focus group session. Send promotional items that allow your active customers and potential customers to take advantage of additional savings on year-end merchandise.

Product

Do you currently make value-added products available to your consumers? Value-added options allow you to develop packaged products and relieve some of the burden from your customers who would need to find and assemble materials to create a desired outcome. In exchange for the convenience of a value-added product, manufacturers can charge more for the finished product. As consumers become more concerned with the amount of time available for their families, they may be more likely to consider purchasing value-added products that will save them time. Containers pre-planted with annuals offer these consumers an option they might not otherwise be able to construct or have time to complete. This idea has benefited the grocery industry,



Marketing

which sells whole meal replacements or meals-to-go. The grocery industry has also taken advantage of bundling products together (pasta, pasta sauce, and cheese next to hamburger in the meat department) that consumers can easily grab, go home, and assemble themselves. This idea could also be implemented in a garden center where an end cap could be stocked with complementary annuals, potting mix, decorative containers, fertilizer, and garden gloves. Not only will this offering meet consumers' needs for product, but service as well.

Service

We've talked about customer service and knowledgeable staff, but other educational efforts are valid as well. Fact sheets or informational brochures that assist customers with proper plant selection, planting tips, or holiday plant care can be a great relief, especially if customers are purchasing a product they are unfamiliar

with. Educating consumers complements your product offering and can truly make your business a one-stop-shopping destination. Let them learn at your store from you, your local garden writer or author, or Master Gardener who enjoys sharing information with a consumer audience.

Consider these ideas to develop a store where customers really enjoy shopping. Continue to look at current industry ideas, but also step out of the box and adapt ideas from other industries as well. Remember that consumer research will help you ultimately discover what your customers perceive your business is accomplishing. Think about your business now, what attributes do you excel at, and which need to be developed or improved a bit.

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SNA, OFA, and SGC Join to Create ColorWorld™

Editor's Note: OFA is pleased to recognize that the Southeast Greenhouse Conference (SGC) has joined forces with the Southern Nursery Association (SNA) and OFA – an Association of Floriculture Professionals to create ColorWorld™, which will be unveiled at SNA 2003 ... *The World's Showcase of Horticulture*® this July 31-August 3 at the Georgia World Congress Center (GWCC), Atlanta, Georgia. OFA apologizes for not mentioning SGC in a previous article.

ColorWorld™, a new section of the SNA trade show, will feature nearly 8,000 square feet dedicated to the finest floriculture products for the retail and landscape trade, and will feature exciting new flower varieties and displays. The major objective of ColorWorld™ is to promote finished color and assist the greenhouse grower in expanding sales to the retail and landscape segments.

Danny Summers, executive vice president of SNA, said: "We are very excited to have both OFA's and SGC's support for this new effort. Our combined resources will go a long way toward helping expand the market for our color growers and promote this important category to our retail and landscape buyers."

OFA also Partners with SNA for FloralWorld™

OFA and the Southern Nursery Association (SNA) are also partnering to develop a unique trade show and educational event for the retail and wholesale florist industry at SNA 2003.

FloralWorld™, a new section of the SNA trade show, will feature nearly 21,000 square feet dedicated to retail florist products, symposium-style design shows, and workshops by the industry's best, and new product demonstrations including innovative concepts utilizing foliage and cut branches.

Other Benefits

Garden centers and retail florists will also have access to AMERICAS-MART-Atlanta, America's number one wholesale market for gift, silk, and seasonal merchandise, and home accents. Attendees will also get an inside look at what's happening in other segments of the industry.

For information about exhibiting or sponsorship, contact Melinda Howells at OFA (614-487-1117; mhowells@ofa.org).

Sales & Marketing in a Changing Economy

by Jeff Mariola

Imagine that you are going to start an interior landscape business today. You are developing a business plan designed to consistently deliver profitable growth over the next five years. Now open your eyes and look at the current realities facing you:

- post-September 11, 2001 stress
- a declining economic cycle
- war in Iraq
- business re-organization and downsizing

Now snap out of your depression and begin building a sales and marketing plan aimed at finding opportunity in this current business climate.

Begin with a few questions:

• Do my current methods of marketing (Internet, brochures, PowerPoint programs, direct mail, word-of-mouth, fliers) meet the needs of a customer in the new economy?

• Is my “marketing story” one that positions my business as offering a service experience that is essential to the overall success of the business community and clearly adds value?

• Is my “message” being spoken consistently to:

- co-workers
- customers
- new prospects
- vendors
- design community
- business organizations

Before you begin selling your service and product offerings, get your message right. Today’s customers demand:

- improvement to their bottom line;
- hassle-free, effective service (they do not want to manage your people or the plant program);

• enhancement and value building of their image; and

• quality of life in the workplace for their employees and customers.

Does your “message” meet these demands in a simple, no-nonsense, hands-on approach? If not, go back to the drawing board. Your new economy message should be built on a foundation that explores the documented scientific facts that interior plants in the workplace:

• Reduce fatigue, headaches, dry throats, and coughing by more than 25 percent; absenteeism by 5 percent; and noise by up to 10 percent.

• Remove from the air pollutants such as benzene and formaldehyde.

• Reduce stress levels by making the work environment more cheerful, interesting, relaxing, welcoming, and more expensive looking; and humidity levels through transpiration of water through the plant and evaporation from the soil.

Improving the bottom line of a business is job one. Think about this for a minute. My average customer invests \$150 per month in our service experience. That’s \$1,800 a year. If the average customer company has 15 employees working at an average of \$20,000 per person per year, what would they stand to save if the only thing our plants did was save them 5 percent on their absenteeism?

I have done the math. It is more than \$14,000 a year in lost productivity wages. That’s 677 percent more than their annual investment. Even at 1 percent improvement, our service pays for itself!

Get your message right! Once that I have my message right, how do I go

out and sell it to the business community? Now more than ever in this industry, you need to possess professional selling skills if you intend to not only grow your portfolio, but just stay ahead of the closures, bankruptcies, and reductions.

Once you have practiced and mastered your “message,” look at optimizing the core competitiveness of a professional salesperson.

Referrals

Referred prospects close at a rate of 80 percent higher than cold calls. Develop an effective script and rehearse it until it can flow at a moment’s notice. When do you ask? Anytime you have established trust in the relationship. Who do you ask? Everyone you come in contact with. Cold calling is for amateurs.

Identify All Buying Influences in the Relationship

As you develop a strategy to get a company’s interior plant services, you must clearly identify all the people who will impact the decision to go with you.

In every sale there is:

1. An economic buyer – a person, board or committee;
2. A user buyer – usually your main contact; and
3. A technical buyer – the person or persons charged with the task of writing the specifications for the plant program.

Professional salespeople know precisely the roles and goals of each of these buyers. They determine the specific purchasing process of their customers and work toward satisfying the single most important need of each and every person in the relationship.

Know Where You Stand

Sales professionals fully understand their current reality at any point in the selling process. They follow a formula that decides what their single sales objective is, and they take action on this objective. They notice if it is working or not, and change their approach until they achieve what they want

Be Decisive

Great salespeople do not allow their prospect to leave things hanging. They command enough respect that all they want from a potential customer is:

- A yes – to go forward with the program or a continuation in the process; or
- A no – not interested at this time.

They do not accept “I need to think about it.” Investing \$150 a month does not require massive amounts of discussion. Either we go



forward, or I promise to leave you alone. It is that simple.

No Pain – No Gain

Sales champions are aware that in order to be awarded a new service agreement, their prospects must feel implicated and short-changed by their current service. They have to see in your design and proposal the opportunity to immediately improve upon their image and bottom line. Saying no to your proposal must cause them more anguish than saying yes to keeping what they have.

Finding opportunities in a difficult economy is the hallmark of successful salespeople. There are always businesses

and industries that thrive during economic downturns. Take time to brainstorm the opportunities in your market and match a marketing plan to fulfill their needs.

We are in an economic cycle where the winners will be those whose mantra is “Survival of the Smartest.” Rethink your approach to sales and marketing, and begin your journey to even more profitable growth.

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Understanding Water Quality: Part I – Water pH, Alkalinity, and Control of Media pH

by William R. Argo
Paul R. Fisher

Water quality is a key factor affecting pH and nutritional management in container-grown crops. One challenge is that the water quality in your operation can differ from that of your neighbor, and certainly from greenhouses throughout the United States. For example, the median water quality in the United States has a pH of 7.1 and an alkalinity concentration of 130 ppm. However, water pH can range from less than 4.5 to more than 9.0, and alkalinity concentrations can range from 0 to more than 450 ppm (Figure 1, page 12).

Understanding a few technical details about water quality will help you improve nutrient management appropriate for your own greenhouse. For example, if you are a grower in the Midwest with high alkalinity, your strategy for growing a petunia crop will probably differ from an East Coast grower with a very pure water source. In Part 1 of this two-part series, we discuss how water quality affects management of pH of growing media.

pH and Alkalinity are Two Different Aspects of Water Quality

There is a great deal of confusion when it comes to understanding the

definition of water pH and water alkalinity, and why they are important to the management of your crop.

The term pH is a direct measurement of the balance between acidic hydrogen ions (H^+) and basic hydroxide ions (OH^-), and it can be measured with a pH meter. The pH of a solution can range between 0 (very acidic) and 14 (very basic). At a pH of 7.0, the concentrations of H^+ and OH^- are equal, and the solution is said to be neutral. When the pH is above 7.0, the concentration of OH^- is higher than H^+ , and the solution is said to be basic or alkaline (not to be confused with alkalinity). When the solution is

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below 7.0, the concentration of H^+ is higher than OH^- , and the solution is said to be acidic.

Alkalinity is a measure of how much acid it takes to lower the pH below a certain level, also called acid-buffering capacity. Alkalinity is usually measured with a test kit where dilute acid is added to the water until a color change occurs at a specific pH. Alkalinity is not a specific ion, but rather includes the concentration of several ions that affect acid-buffering capacity. Under most conditions, the ions that have the greatest effect on alkalinity are bicarbonates like calcium, magnesium, or sodium bicarbonate, and to a lesser extent, carbonates like calcium or

sodium. Several other ions including hydroxides, phosphates, ammonium, silicates, sulfides, borates, and arsenate also can contribute to alkalinity, but are usually at very low concentrations.

In a water sample, the concentration of all of the ions that make up the alkalinity term are combined and reported as equivalents of calcium carbonate ($CaCO_3$, which is the main component of lime). Alkalinity can therefore be thought of as the “liming content” of the water. The units used to report alkalinity can be parts per million (ppm), mg/liter, or millequivalents (meq.). The relationship between these terms is 50 ppm (or mg/liter) $CaCO_3$ equals 1 meq $CaCO_3$. Sometimes the concentration of bicarbonates is also reported on a water test from a commercial laboratory. In most cases, bicarbonate makes up most of the alkalinity. The relationship is 61 ppm bicarbonate equals 1 meq alkalinity.

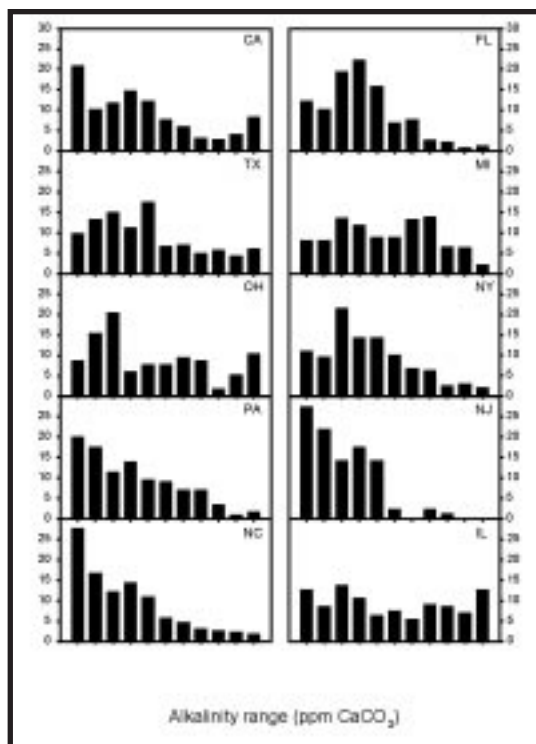


Figure 1. Characterization of irrigation water alkalinity concentrations (in ppm $CaCO_3$) from the 10 leading states in floricultural production in 1995. Median alkalinity concentration for the entire United States was 130 ppm $CaCO_3$, but ranged from 90 ppm $CaCO_3$ in New Jersey and North Carolina to 200 ppm $CaCO_3$ in Michigan and Illinois. Research from Bill Argo, John Biernbaum, and Darryl Warncke (For more information, see *HortTechnology* 7(1): 49-51).

Water Alkalinity has a Big Effect on Media pH

When it comes to managing the pH of root media, the alkalinity concentration has a much greater effect than does water pH. Alkalinity (calcium bicarbonate, magnesium bicarbonate, and sodium bicarbonate) and limestone (calcium and magnesium carbonate) react very similarly when added to a root medium. Just like too much limestone, the use of irrigation water containing high levels of alkalinity can cause the pH of the root media to increase above acceptable levels for plant growth.

For example, a limestone incorporation rate of 5 pounds per cubic yard will supply approximately 100 meq of limestone per 6-inch standard pot. Applying 16 fluid ounces of water containing 250 ppm alkalinity to that 6-inch pot will supply

about 2.5 meq of lime. That does not sound like much until you consider that after 10 irrigations you have effectively increased the limestone incorporation rate by 25 percent.

To compare the effect of water pH or alkalinity on the ability to raise pH (or neutralize acid) in a medium, 50 ppm alkalinity (which is a low alkalinity, see Figure 1) would be similar to having a water with pH 11 (i.e. an extremely high pH). Water with a pH of 8.0 would have the same effect on media pH as an alkalinity concentration of only 0.05 ppm (i.e. almost nothing).

Don't Ignore Water pH

Water pH is still important for crop management. Even though it has little impact on the root media, water pH does affect the solubility of fertilizers and the efficacy of insecticides, fungicides, and growth regulators before you apply them to the crop. Generally, the higher the water pH, the lower the solubility of these materials.

Minimizing the Effects of High Alkalinity

The common problems associated with high alkalinity result from its tendency to raise media pH. High media pH causes micronutrient deficiency in species like petunia and calibrachoa. The most common method for minimizing the “liming effect” of high alkalinity is to add a strong mineral acid (sulfuric, phosphoric, or nitric acid) directly to the irrigation water. As the pH of the water decreases, some of the alkalinity is neutralized. All of the alkalinity has been neutralized when the pH of the water reaches 4.5.

It is commonly recommended to add a sufficient amount of acid to decrease the alkalinity concentration to between 50 and 120 ppm $CaCO_3$, depending on the crop. The amount of acid that you need to add depends on the amount of alkalinity that needs to be neutralized and the type of acid that is used. This can be calculated from Table 1, or you can download the “acid addition calculator” from

Purdue University and North Carolina State University at www.ces.ncsu.edu/depts/hort/floriculture/software/alk.html.

With most acid injectors, it is difficult or impossible to figure out how much acid is being added. Instead, most growers will “dial in” the acid injector by measuring the pH of the water coming out of the end of the hose. This method can give you a very rough estimate on the amount of alkalinity left in the water. For example, a solution pH of 5.2 should have about 40 ppm alkalinity, a pH of 5.8 at 80 ppm alkalinity, and a pH of 6.2 at 120 ppm alkalinity. But remember that this relationship between pH and alkalinity levels is prone to large amounts of error. The only way to

know for sure how much alkalinity is left after acid injection is to measure it.

One option is to make a chart of measured water pH versus alkalinity concentration for your own water source. That way “dialing in” the acid injector is more precise because it is based on measured values rather than rough estimates. Alkalinity can be tested by commercial labs with a standard water test, or alkalinity test kits can be purchased from chemistry supply companies (Table 2).

Rarely, if ever, should you add enough acid to neutralize all the alkalinity. The problem is that once you reach a water pH of 4.5, the alkalinity concentration is zero. Once this pH

is reached, even small additions of acid can cause the pH of the water to decrease rapidly to levels that are potentially toxic to plants (and people). In addition, strong mineral acids are very caustic and should be handled with extreme care. Always wear proper eye, face, and skin protection when working with acid. Avoid diluting acids by hand; but if you have to, always add acid to water, not water to acid. Some acids may be incompatible with fertilizers, especially if mixed in the same stock tank; or they may corrode pipes over time. If possible, always inject acid separately from the fertilizer.

Another option for alkalinity control is to use acidic fertilizers. Fertilizers high in ammoniacal nitrogen produce an acidic reaction when added to the root medium, which can be used to neutralize the effect of water alkalinity. For example, 20-20-20 (69 percent NH₄-N) has enough acidity to be used with 200 to 300 ppm alkalinity water without further acidification.

There are several drawbacks to using fertilizer for alkalinity control. Fertilizers high in ammoniacal nitrogen may cause excessive growth and are not effective when the temperature of the media is less than 60°F. In addition, you lose flexibility because you can only choose commercial fertilizers based on ammonium content. For example, high ammonium fertilizers available to you may lack calcium or other key nutrients.

Another option for alkalinity control is to change water sources. There are a number of sources, such as rain water or reverse osmosis-purified water, that contain little if any alkalinity. Sometimes municipal water sources brought into the greenhouse have lower alkalinity levels than the well water (for example, Detroit and Toledo city water originating from Lake Erie has significantly lower alkalinity than well water from southeast Michigan or northwest Ohio). These low alkalinity water sources can be used by themselves or blended with

Table 1. Acids used for irrigation water acidification.

Type of acid	Specific gravity	Amount of acid per 100 gallons needed to remove 1 ppm CaCO ₃ of alkalinity
75% Phosphoric	1.58 grams/ml	0.021 fl. oz.
85% Phosphoric	1.69 grams/ml	0.017 fl. oz.
35% Sulfuric	1.26 grams/ml	0.028 fl. oz.
93% Sulfuric	1.83 grams/ml	0.007 fl. oz.
61% Nitric	1.38 grams/ml	0.019 fl. oz.

Example. The amount of 35% sulfuric acid per 100 gallons of water needed to remove 150 ppm CaCO₃ of alkalinity.

Alk. Removed (in ppm CaCO ₃)	x	Fl. oz acid to remove 1 ppm Alkalinity (from Table 2)	=	Total fl. oz. of acid
150	x	0.028	=	4.2 fl. oz.

Table 2. Alkalinity concentrations should be tested regularly. Commercial laboratories will test for alkalinity with a standard water test. Alkalinity test kits can also be purchased from chemistry supply companies (listed below) or from local greenhouse or nursery distributors. When choosing a kit, always get one that tests for total alkalinity, not a specific ion like bicarbonate.

Cole Parmer Company	800-323-4340	www.coleparmer.com
Hach Company	800-227-4224	www.hach.com
Hanna Instruments	877-694-2662	www.hannainst.com
Hoskin Scientific Ltd	905-333-5510	www.hoskin.ca
LaMotte Company	800-344-3100	www.lamotte.com
Miller Analytical Services	877-264-2288	www.milleranalytical.com
Myron L Company	760-438-2021	www.myronl.com
Omega Engineering Inc	888-826-6342	www.omega.com
Orbeco Analytical	800-922-5242	www.orbeco.com

Note: It can sometimes be difficult to find alkalinity test kits on a Web site catalog. First check for water testing or water analysis before looking for alkalinity testing.

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the higher alkalinity well water to get to a more desirable level without adding acid. Drawbacks to using alternative water sources include cost and storage problems. Changing water sources will also change the composition of the fertilizer solution applied to the crop.

Low Alkalinity Effects

Not everybody in the world has irrigation water with high alkalinity. There are a large number of growers in states like Alabama, California, Colorado, Georgia, North Carolina, New Jersey, New York, Virginia, and the New England states that have alkalinity levels below 40 ppm without any acidification. Even in states where high alkalinity is considered the norm, some growers have switched to low alkalinity sources such as reverse osmosis-purified water or rain water.

The primary problem associated with low alkalinity water is a tendency for media pH to drop over time. Low media pH can cause iron and manganese toxicity in crops like geraniums, marigolds, and New Guinea impatiens. Growers often run into low pH problems when low water alkalinity is combined with a fertilizer high in ammonium (i.e. 20-10-20). Fertilizers high in ammoniacal nitrogen are acidic; and without any alkalinity in the water to balance the reaction (resist lowering of pH), acidic fertilizers will tend to drive the media pH down over time.

Fertilizers that are high in nitrate nitrogen (i.e. basic reaction fertilizers) often do not cause the media pH to increase when combined with low alkalinity water. In fact, it is often

recommended that growers with low alkalinity water use fertilizers with high in nitrate nitrogen simply to maintain a stable media pH. When low media pH does occur in conjunction with a low alkalinity water source, raising media pH with high nitrate fertilizers may be difficult or impossible. Growers with low alkalinity should stock potassium bicarbonate or liquid lime, which are materials used to rapidly raise media pH when it is too low.

Ideal Alkalinity vs. Manageable Alkalinity

It is commonly recommended that the ideal alkalinity of an irrigation water should be between 50 to 120 ppm CaCO_3 , depending on the crop, its stage of development, and the size of the pot. However, these recommendations do not take into account the type of fertilizer that is being used. Always remember that irrigation water and water-soluble fertilizer are inseparable when discussing pH management or plant nutrition.

In the case of pH management, the reaction produced by the fertilizer solution is a combination of the alkalinity concentration in the water and the ammoniacal nitrogen concentration in the fertilizers. In order to get a fertilizer solution that does not increase or decrease the media pH over time ("neutral" fertilizer solution), the acidity produced by the ammoniacal nitrogen in the fertilizer should be balanced by the liming effect of the alkalinity in the water.

For example, a "neutral" fertilizer solution can be produced by using an irrigation water with 150 ppm alkalinity

balanced with a fertilizer containing between 30 percent to 40 percent of the nitrogen in the ammoniacal form (i.e. 20-10-20). Lowering the water alkalinity to 40 ppm would require a fertilizer with less acidity (lower ammoniacal nitrogen levels) to produce a neutral fertilizer solution (i.e. 13-2-13 with 5 percent ammoniacal nitrogen). Therefore, there is not a single optimal alkalinity. Instead, you should adapt your pH management program to the water source using fertilizer selection and, if needed, acidification.

So how would a grower in the Midwest with high alkalinity differ in nutrient management for petunias from the East Coast grower with low alkalinity? The Midwest grower may consider acidification to lower alkalinity, blending of the water source with another more pure source, or use a fertilizer high in ammonium content. In contrast, the East Coast grower would not acidify the water, would select a fertilizer high in nitrate content, and would only use a high-ammonium fertilizer as a corrective measure if media pH was too high. In this way, each grower would balance the water quality and nutrient management to achieve a stable media pH over time.

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Instilling Work Ethic Within Our Employees

by John Gaydos

When asked to write an article on work ethic a few months ago, I started to observe people and teams that I encountered on a daily basis. A few years ago, I was a part of workplace team and could instantly comment on whether or not those teams around me were *inspired employees*. Now I am a member of a very mobile “virtual team,” and it is very seldom that we find ourselves in one spot, working as a face-to-face interactive group. So opportunities for group evaluations are limited.

Today, I spend the majority of my workday, week, or month on the road. The people, employees, and team members with whom I interact, for the most part, are not directly associated with me or my extended business family. These are people doing their jobs, and in some way influencing me while I am doing mine – people in the travel business, ticket agents, rental car associates, hotel staffs, airline stewards; people in the U.S. horticultural trade who work with me to accomplish increased sales; and even people beyond the borders, within the global horticultural business that make things happen. I now observe and critique workplace enthusiasm, team spirit, and work ethic as it affects me in doing my job. It was within this observation period that I began thinking about how to create an environment for work and fun. This then became the focus of my article.

I think work ethic, employee enthusiasm, high productivity, and satisfied customers all have a common link. When you find an organization that has a dedicated group of employees, you will find teammates who will go out of their way to help one another succeed. I think that when owners and managers directly communicate (both listening and speaking) with their employees, a bond of trust forms.



I truly believe that when we build a team or replace a member of the work force, we must look for an employee who will fit with the existing group personality. Team dynamics change with each new employee, but the end desire is the same: we want the same dedication, productivity, teamwork, and company spirit. As much as we choose not to recognize or ignore the impact of 9/11, the workplace has changed. Employees want to belong to or be associated with a caring organization; they want to contribute and make a difference. The workplace, the employee/employer interactions, involvement in the community, and the existing employee base will all influence the development of new employees.

Knowing what motivates a new employee and why that employee was looking for a new job is critical in building a working relationship. Why do employees come to work? Often we make the assumption that all a prospective employee wants is the paycheck and therefore is totally motivated by the almighty dollar. This may be true with some hires; but if we focus on monetary motivation for all employees, we end up missing opportunities with the most potential team members. In a recent survey, these reasons were listed as employment motivators when money wasn't the primary factor:

- a chance to contribute
- a new work environment
- escape/change from current surroundings
- financial contribution

- opportunity to learn (specialized field) hands-on
- the need to be part of a team/social interaction

Is it possible that these non-pay-check motivators can be achieved within the horticultural work environment? If not here, where? Not only do we offer a hands-on work experience, often we have to train and build teams to accomplish the “Herculean tasks” that must be accomplished each season.

What do employers and managers want from their employees? Hopefully the day of hiring a “pair of hands” is long gone. Every employee is a contributor to the company's brain bank. The opportunity for problem solving and increased employee productivity increases with each new face hired. Finding ways to tap that potential is daunting. Hiring was easy compared to the difficult work of creating an environment that is non-threatening and yet productive that will encourage employee involvement.

As mentioned earlier, I observe different employee/employer relations constantly. The positive relationships seem to include some common characteristics. Frequent interaction and communication between managers and employees is ever present. There is also mentoring of both teams and individuals (new and seasoned employees) with close personal support, both during a training period as well as when employees work on their own.

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Instilling Work Ethic Within Our Employees

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“Inspect the expected” as teams and employees go about their daily tasks; check up on them to fine-tune their performance. If correction is needed, make sure it is prompt, personal, and on task. Speak as a counselor or mentor, not as a candidate for dictator of the year. Encourage questions; explain why a particular process or series of steps is important. The more information you can give, the more the daily work becomes valued. As a manager, maintain your sense of humor, even though there will be times this is the last emotion that comes to mind. Explain, ask for feedback, and then confirm their understanding of directions.

As your employees become more skilled and need less hand-holding, allow natural leaders of the group to be more involved. The process of group dynamics will prompt the selection of leaders; be involved, and make sure the team leader who emerges has the traits that you need to help run your business. Encourage employee input, and request “debriefings” as the day is done. Make sure employee appreciation is evident and expressed every hour of every day, not just once a year!

By building a team and being aware of employees’ needs and concerns, you encourage mutual respect. This relationship leads to a commitment that employment is a two-way street. An honest day’s work commands a certain level of financial commitment. Sit down with your employees and discuss their goals and their satisfaction with your organization. Communication is the key to all good relationships; make sure that your door is always open. Encourage exchange of ideas; make sure your trade magazines are available for “normal employee” reading. Have brainstorming meetings that involve everyone; this builds spirit and elevates the level of worker participation. Remember to celebrate success. Reinforce positive experiences, and try to focus not only work achievements but also the personal successes experienced by your staff.

Think about how you support and build relationships outside of work with family and friends and then apply those activities to your employees and teammates. Positive work ethic and strong employee morale do not happen by accident. To expect a group of new employees to walk in your door and get “pumped” about the opportunity to work hard, get dirty, sweat in hot greenhouses, and put in long hours is just a tad unrealistic.

However, it is possible to grow this enthusiasm by creating the right environment and sharing some of your time. Encourage interest in their trade; allow the employees to test grow your products at home and then require a “field report.” I have heard of employee planting parties who plan their home gardens at work and then install them together. Plants are offered either at a much reduced price or free with certain employment stipulations. What a perfect opportunity to build relationships with employees, and then also cement their commitment to “their workplace.”

The era of them vs. us is long gone; we are teams. As owners and managers, we cannot expect a commitment from our employees unless we make a commitment to them. Our work ethic will impact their work ethic. By creating an environment where we grow together, we will create an atmosphere that encourages smiles, participation, and rewards. A very sustainable, productive workplace is possible with happy employees, and it is within your power to create it.

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Repeat and Referral Customers: The Gold Chain that Never Ends

by Bill McCurry

Editor’s Note: Bill McCurry presented a session at the 2002 OFA Short Course called “Good Shop/Bad Shop – The Art of Customer Service.” McCurry and Gary Hudson, Hudson Associates, collaborated on research for the presentation. The following is Part III of a series of articles based on their research findings.

Successful marketing is circular. It converts first-time customers into repeat customers who then refer new customers who become repeat customers who refer more customers, and so on. The circle continues and widens – along with your profits.

Jay Conrad Levinson, the guru of guerrilla marketing tells us, “There is only circular marketing that continues. Straight line marketing leads

straight to chapters . . . your choice of chapters 7, 11, or 13.”

Jay’s point is clearly valid in today’s marketplace. Horticultural firms, regardless of their specialties, can’t afford to constantly advertise for new customers. The media costs, coupled with customers’ ability to tune out your commercials, makes your advertising less effective per dollar spent. Your survival depends on retention of

your existing customers. Referrals from those customers are sweet icing on the cake of profits.

Why do some firms seem to have more loyal customers than others? In their recent book, *The Power of Cult Branding*, Matthew W. Ragas and Bolivar J. Bueno list several factors, but their number one golden rule is that customers want to be part of a group that's different.

There are really two issues in that one golden rule. First, customers want to be part of a group, a community of like-minded people. Second, that group has to be "different," somehow distinct from every other group. How is your organization different from your competition? If you can't determine what differentiates you from your competitors, your customers won't be able to either, and they won't have any compelling reason to return. How do you make your customers feel "different" shopping with you instead of shopping elsewhere?

Halla Nursery in Chanhassen, Minnesota, believes the fun and ease of shopping in their garden center is one of their differentiators. Halla focuses on the little things along with the bigger issues. For instance, most of their trees and shrubs are laid out in alphabetical order over acres of space, making them easier for customers to find. The foot paths are constantly monitored so customers won't get mud on their shoes, regardless of the weather conditions. A custom-built coffee bar allows customers to sit and enjoy the flowers or sip a beverage while walking through the various displays. Regular coffee is complimentary while "specialty drinks," like cappuccino and hot chocolate, are sold for the princely sum of 50 cents. It's a shopping perk that makes Halla Nursery fun, unique, and special to the customer.

When you want to create an environment that's fun and friendly to shop in, consider first who is in the shopping group. Most horticultural shoppers are female – many bring their family with them, including small children. Van Cooley of Malmberg's in Brooklyn Center,



Minnesota, hands out Lollipop Credit Cards to every child shopping at his garden center. Van wears an apron with large pockets full of lollipops. Children must have their "credit card," obtained free from any Malmberg's cashier, before they approach him for a candy treat. The kids love to come to Malmberg's and be treated like adults with their credit cards. Parents often report they were just driving by when their child begged them to stop to get a lollipop. "We stick out in the child's mind and thus the parents come back," Van says.

Halla Nursery has a large outdoor play equipment display that doubles as a children's activity area. Most garden centers that sell playground equipment hang a prominent "Do Not Touch" sign on it. Instead, Halla coordinates with their manufacturer to have on-site working models installed so children can play on them. This creates a perfect selling environment. Happy kids playing on the equipment makes the sales almost automatic. The added benefit is that while the kids are busy playing, the parents load their shopping carts with gardening products.

Of course, there's more to building repeat business than just a unique physical environment. Customer service remains a real issue. (See prior articles in the last two issues of the *OFA Bulletin*). At the OFA Short Course, we've defined customer service as "exceeding the customers' expectations." The catch is you must know what your customer ideally wants if you are to reach that perfect level of customer service.

In *The Power of Cult Branding*, Ragas and Bueno tell us people want to belong; they want to be part of a group. A sales team that is attuned to their customers, that listens to what is being asked for and then responds, conveys to the customers that they are part of a community that cares about them.

One way to enhance that connection is to exchange names. Using your customer's name always makes a positive impression. Equally important is making certain your team members all have name tags that can be easily read. If you are one of the last holdouts who hasn't supplied your staff with easy-to-read, professional name tags, do it now! How can your customers get to know you – and feel you care about them – if you won't even tell them who you are? Customers build bonds with real people, not with buildings, corporations, or cute advertising.

Encouraging repeat customers requires both overt and covert actions. One overt action is aggressively marketing to specific customers' needs. Halla Nursery now combs their database for anyone who has ever purchased live fish or a water pump and sends them information on water gardens, along with an invitation to their water garden classes. Garden center manager, Kelly Lorenz, says, "We're using the computer system in ways we didn't know before . . . now we're focusing our efforts on things that are important to the specific customer."

A more covert approach to creating repeat customers is following that first golden rule and nurturing an environment in which the customer feels cared about more than anywhere else. We've all heard the standard bromides: "People do business with people," "No one cares how much you know until they know how much you care," or "You have no standing without understanding." The fact is these sayings are endlessly repeated because they have proven over time to be accurate – and if you follow them, they will help you build your repeat and referral business.

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Know the Chemicals You are Selling

by Jim Chatfield

Good product knowledge is an important part of professionalism in the green industry. It creates customers who are more successful in their gardening and landscaping. It results in a better reputation for your business. It makes for better environmental stewardship as products are used properly. Ultimately it grows better and happier employees and businesses. Product knowledge comes from many sources: the accumulated expertise in your company; information provided by vendors, product labels, resources such as the Extension Service, many books, magazines, and other printed material; and your own improved education from horticultural experience over the years. Here are a few keys and examples to help improve your knowledge base.

Know Thy Products

The names of the products you sell are often a mystery to your customers. Make sure the same cannot be said about yourself and your fellow professionals. For example, what is the answer to this question: Which of the following is in Bug B-Gon? A. diazinon; B. resmethrin; C. permethrin; D. carbaryl; or E. esfenvalerate. The answer is that all of these chemicals are in various Bug-B-Gon products. Do not assume that all products in the Bug-B-Gon line have the same chemicals or the same specific strengths and weaknesses in controlling insects and mites. For example, carbaryl, which is most often sold as Sevin, is a good broad-spectrum insecticide. It does well with beetles and caterpillars, but is relatively poor at aphid control compared to many other insecticides. Also, carbaryl does a good job on certain eriophyid mites, but not on spider mites. Each product has its own profile.

As you may have noticed, pesticides have a number of names. Carbaryl is a common name; Sevin is a trade name.

Triforine fungicide is sold under the trade name of Funginex. Acephate insecticide is sold under the trade name of Orthene. The fungicide triforine and the insecticide acephate combined were once sold as Orthonex Insect and Disease Control. Then fenbutanin-oxide miticide was added to these and sold with triforine and acephate in the concentrate form of Orthonex Insect and Disease Control. Then resmethrin was used as a miticide in the formulation for the ready-to-use aerosol can product of Orthonex. The point is that products change, often every year. To keep up with this and to know what products you are recommending and selling, you need to review the new labels of the products you sell each year.

This reinforces the point that labels reflect the changing history not only of the products themselves, but also the history of product use. Over time, labels reflect what we have learned about the product. Thus the label of Spectracide Immunox Plus has said the following: "Use with care on ferns, palms, and fuchsia," and the label of Ortho Diazinon Ultra Insect Spray has carried the note: "Resistant leafminers will not be controlled by diazinon or similar products." This reflects experience with phytotoxicity on certain plants in the former case and the development of insecticide resistance among leafminer insects in the latter case. Read those labels – they have a lot of important information.

A Fungicide by Any Other Name ...

A fungicide by any other name is a different fungicide with a unique profile of strengths and weaknesses. There are no fungicides that work for all fungal diseases. For example, certain fungicides work for water molds such as *Pythium* and *Phytophthora*, but not for other types of diseases (eg. metalaxyl sold as Subdue). Other fungicides may work best for powdery

mildews and some other fungal diseases, but not for water molds (propiconazole sold as Banner). Sometimes there are, however, combination fungicides with a broader range of activity (eg. Banrot) that combines a water mold fungicide and a fungicide for other soilborne fungi such as *Rhizoctonia* and *Fusarium*.

Learning these nuances can be a big step forward professionally because the lack of knowledge of these product differences is more common than you think. I remember working in a greenhouse in the 1970s in which a benzimidazole fungicide (benomyl sold as Benlate back in those days) was being used as a soil drench to try to control *Pythium* blackleg of geranium. There was as much as 25 percent loss to this disease. We finally realized that the proper soil drench to use was Banrot, a combination product which included a water mold fungicide, etridiazole.

Immediately, we reduced incidence of *Pythium* black leg to less than 1 percent of the cuttings. The benomyl was the wrong fungicide – it does not control water mold diseases. This might just be dismissed as ancient history or the anomaly of our ignorance. However, when I mention this example to this day, there are people who clearly are surprised and are still trying to fit benzimidazoles (such as thiophanate-methyl) into a square peg-round hole role as a water mold fungicide.

It also goes without saying that fungicides do not work for insect problems and insecticides do not work for fungal diseases, but sometimes the distinction is less clear. For examples, fireblight is a disease caused by a bacterium with little that is truly effective found in a garden center. When you see a fungicide with "blight" listed on the label, it is important to realize that blight does not refer to "fireblight," which is caused by a bacterium. Sometimes, even with this basic

knowledge, you can be fooled. For example, insecticides such as carbaryl can actually help with the disease bacterial wilt of cucumber. How so, since carbaryl is an insecticide and the disease is caused by a bacterium? Carbaryl helps indirectly because it controls the spotted and striped cucumber beetles that vector the cucumber wilt bacterium from plant to plant.

Know How Products Work

As Ohio State University entomologist Dave Shelar has often said, "A picture of a dead bug on the label does not mean the product killed it." Sometimes you have to go beyond the label to know the relative effectiveness of a product. This is where information in university bulletins and on reliable websites comes into play. Check out websites such as webgarden.osu.edu which contains a PlantFacts section with more than 20,000 fact sheets from universities and other institutions across the country.

Also, realize that labels tell a great deal about not only what problems are controlled with a product, but the proper timing of application. This is especially important with fungicides, in which timing is truly everything since prevention is the key. These fungicides work by killing germinating fungal spores when they are vulnerable and trying to penetrate plant leaves, not by killing the fungus once it is already inside plant cells.

So, for example the Bonide Fungonil product (which contains the fungicide chlorothalonil) has suggested first applications that vary for different diseases. For *Taphrina* leaf blister on oak: at dormant bud swell. For scab on firethorn: at spring budbreak. For viburnum powdery mildew: in mid-summer. This reflects when infections typically occur by the fungi that cause these diseases.

Home Remedies are Not the Same

A good example of the importance of what goes into a pesticide label is with insecticidal soaps such as Safer



Soap sold in garden centers. Sometimes people ask why not just use Ivory Soap? After all, it is a fatty acid soap and so are the soaps in the garden center. But consider the difference. Companies that sell and obtain labels for insecticidal soaps have run tests to determine what rates should be used for effective insect control and what rates avoid phytotoxicity to plants. In initial tests and through experience over time with certain plants or certain cultivars of plants, companies learn about those plants which are especially sensitive to injury from soap. That knowledge is added to the insecticidal soap label. If the formulation is changed over the years, then new information is added to the label.

Contrast that with Ivory Soap. It is not labeled as an insecticide. There is no need to indicate on an Ivory Soap label which plants might be especially sensitive to damage at whatever anyone assumes is the usual rate. Further, let's say that Ivory Soap changes its formulation. Is it likely that they care or are even aware of how that affects, say, aglaonema? No - Ivory Soap is not manufactured for insect control on plants. Its label will tell us nothing about any proper use on plants.

Sometimes Chemicals are Not the Answer

Finally, remember that the pest management chemicals you have to sell are not the only pest management products you offer. Many problems do not have chemical solutions. Although fungicides may help control root rot diseases in greenhouse, container production, and propagation situations, they will not be useful in landscape situations. You do have disease control products for the landscape to sell, however. They include soil amendments


such as compost to help develop better soil structure and better air pore space in soils. They include irrigation equipment that keeps water off foliage and helps prevent foliar disease. They include pruners to prune out diseased plant tissue and insect infestations also.

Remember your best answer to pest and disease problems – the plants which you sell and your knowledge about selecting the right plant for the right place. You sell fungicides for powdery mildew diseases, but you also offer the mildew-resistant 'Profusion' series of zinnias and the 'Petite Delight' series of beebalm. You sell fungicides for apple scab disease on crabapple, but you also offer 'Adirondack', 'Sargent', and 'Prairifire' with outstanding genetic resistance to apple scab disease. You have the knowledge to recommend that flowering dogwood and European birches should not be planted in stressful hot, sunny locations because of increased risk in these sites for borer infestations.

Take the time to learn what you sell – both your pest control products and your plants. The result will be a growing success for both you and your customers.

Note: The examples used in this article do not imply recommendation of any product, but are used for illustration only. As noted in the article, the specific combination of chemicals in any trade name product may vary from year to year.

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The Floriculture College of Knowledge™

by Erik Runkle

The Floriculture College of Knowledge™ is a certificate program developed specifically for greenhouse growers who have at least some expertise in greenhouse production and want to improve their knowledge and skills in the production of floriculture crops. This is a certificate program consisting of 12 modules, or courses. Each course is four hours long and is focused on specific crop types (such as potted plant production), growing strategies (such as growth regulators), and principles (such as environmental management – light). Participants who successfully complete all 12 units receive a professional certificate recognizing them as a certified greenhouse grower.

The Floriculture College of Knowledge, often simplified as College of Knowledge (or CoK), was initially developed by Dr. Will Carlson at Michigan State University in 1998. Dr. Carlson recognized that there were more greenhouse grower positions available than there were trained floriculturists. In recent years, the number of graduating university students in floriculture has been insufficient to meet the needs of the growing industry. Furthermore, most greenhouse employees who aspired to become growers could not afford the time or expense to enroll in university classes. To help meet this need, the College of Knowledge was developed as an educational program that could be completed in a relatively short time period and at a relatively low cost.

The College of Knowledge was developed over a period of three years by more than 20 people, including faculty and staff at Michigan State and other universities, and industry professionals. It was developed in three tracks, with each track consisting of

four courses. In the first year, the first four courses (Track I) developed were: root zone management, seedling plug production, greenhouse disease management, and greenhouse insect management. The development of these (and other) courses was funded in part by Project GREEN, a cooperative effort by plant-based commodities and businesses with Michigan State University Extension, the Michigan Agricultural Experiment Station, Michigan Department of Agriculture, and Michigan Farm Bureau.

In the second year, the Track II courses were developed: growth regulators, bedding plant production, environmental management – light, and forcing perennials. Finally, the last four courses (Track III) were developed in the third year: potted plant production, environmental management – temperature, hanging baskets and containers, and physiological disorders. Brief course descriptions can be found in Figure 1. New participants of the College of Knowledge are encouraged to start with Track I courses. Courses in Tracks II and III are slightly more advanced, and the background information from Track I courses will prove helpful.

This year, Tracks I and III will be presented on Friday and Saturday (July 11 and 12, 2003) at the OFA Short Course. The College of Knowledge has been delivered in Michigan during the past four years, and was presented out-of-state for the first time at the OFA Short Course last year. Participants have come from a range of educational backgrounds, work experiences, and geographic locations. At the OFA Short Course last year, participants were from 12 states and Singapore. Some participants have had no formal horticulture training, while others have completed

advanced degrees in horticulture. Some participants have little growing experience, while others have been in the business for more than 25 years.

Greenhouse owners have been supportive of the certificate program and often are willing to pay the course fees and provide time off work for their employees to attend classes. Owners comment that communication with employees improves, and the participants demonstrate greater knowledge on the job and ask more technical questions. Head growers and owners have also attended the courses to brush-up on some growing aspects and learn about relatively new cropping strategies or concepts.

Courses have been delivered by faculty and Extension personnel from Michigan State University, The Ohio State University, and Clemson University. Each presentation utilizes PowerPoint, and participants receive notebooks containing course notes to follow along. Courses are delivered in an informal, classroom environment, with plenty of opportunities for group discussions and questions. In addition to the course notes, participants in each College of Knowledge course receive textbooks, bulletins, and supplemental information, all of which can be taken back to the workplace for future reference. The library that participants develop is quite extensive and proves useful with future challenges and questions.

Upon completion of each course, participants are asked to complete a written exam. These tests are to be completed at home, and participants are able to use any sources of information to answer the questions, including discussing the questions with colleagues at work or with fellow classmates. Exams are returned to Michigan

State University, and participants who pass the exam receive a certificate of completion for each course. To date, the program has drawn over 300 registrants, and 33 of those have successfully completed all 12 courses.

Growers have the option of completing some of the tracks in Michigan at the annual Greenhouse Growers Expo conference held in Lansing in early November each year. With the offerings in Ohio and Michigan, participants can now complete all 12 courses in one year. Each track of four courses (16 hours of instruction) costs \$800 at the Short Course for OFA members who register before June 20, 2003. The fee for non-members is \$900 with early registration. See the Short Course program or go on-line at <http://www.ofa.org> for more information and registration for the Floriculture College of Knowledge at the OFA Short Course. For more information on offerings in Michigan, visit the College of Knowledge website at <http://www.hrt.msu.edu/cok.htm>.

All 12 courses of the Floriculture College of Knowledge have also been developed and presented in Spanish in Michigan. The courses have been taught by Claudio Pasian of The Ohio State University, Spanish-speaking Extension agents at Michigan State University, and industry professionals. To date, 63 participants have enrolled in the Spanish College of Knowledge.

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Figure 1. Brief descriptions of the 12 courses that comprise Michigan State University's Floriculture College of Knowledge™. Tracks I and III will be offered at the OFA Short Course on July 11 and 12, 2003.

TRACK I

Root Zone Management provides the latest practical information on irrigation water, growing media, and fertilizers. Participants will gain knowledge to increase success growing in peat and bark-based media.

Seedling Plug Production approaches the art from a scientific perspective, providing participants with an in-depth view of using media, water, temperature, nutrients, and growth regulators to produce quality plugs.

Greenhouse Disease Management covers the detection of the most common diseases of greenhouse crops. The course provides a closer look at disease cycles and control strategies to help growers decide which biological, environmental, cultural, and chemical measures are appropriate to control diseases without damaging crops.

Greenhouse Insect Management looks at pest life cycles, beneficial insects and mites, and chemicals in an effort to enhance participants' abilities to control insects in the greenhouse. Growers will leave this course with an understanding of the management of insects and a renewed confidence in their control methods.

TRACK II

Growth Regulators provides the latest practical information on the composition of these chemicals and how they work on floriculture crops. Participants will gain knowledge of timing and application of common products.

Bedding Plant Production covers the basics of growing bedding plants, from selection of containers to in-depth scheduling of the most popular crops. Growers will explore how light, temperature, nutrition, media, and watering can be optimized for major bedding plant crops.

Environmental Management – Light provides participants with an overview of the impact of light quality, quantity, intensity, and duration on greenhouse plants. Concepts are presented and then reinforced with examples of common floriculture crops.

Forcing Perennials in Greenhouses explains how to condition plants for forcing and provides step-by-step instructions on how to produce plants in flower for a particular market finish date.

TRACK III

Potted Plant Production discusses environmental factors and cultural practices to successfully produce potted plants. Concepts and examples will then be applied to several of the major floricultural potted crops grown in the United States.

Environmental Management – Temperature presents in-depth information on how temperature influences plant growth and development, from the seedling stage to flowering. Learn how temperature can be manipulated to control flower initiation and development, crop timing, crop quality, and plant height.

Hanging Baskets and Containers focuses on how to select and produce plants for containerized production. This course provides practical information on how to choose, space, schedule, and grow a variety of suitable species. Production costs are also discussed.

Physiological Disorders will acquaint growers with recognizing problems encountered when growing, and then how to correct them. You'll learn what to look for so that corrective actions can be taken to minimize crop losses.

Nominees for 2003-04 OFA Officers and Board of Directors

All active members are encouraged to vote for officers and Board members. OFA is your organization. Exercise your right to vote. Elect those persons you want to represent you. All active members will be mailed the ballot in May. The ballots must be returned to OFA by June 9, 2003.

President

Kathleen Benken,

Silverton, Ohio, is vice president of H.J. Benken Inc. Benken's is a 60,000-square-foot greenhouse, retail florist, and garden center. Kathy's responsibilities include advertising, signage, all printed materials, newsletter editor, and problem solver. She has attended The Art Academy of Cincinnati, participated in numerous Short Course presentations for more than 20 years, and previously worked for the Cincinnati Horticultural Society. Kathy has been involved with OFA's Garden Center, Publications, and Retail Extension and Short Course committees, the Board of Directors, and the OFA Steering Committee, as well as America in Bloom. She is currently serving as the OFA vice president.



Vice President

Jim Broderick,

Columbus, Ohio, is president and owner of Plantland Garden Centers. He is a graduate of Columbus State Community College. He was vice president and production manager for Walter J. Engel Inc. for 28 years. Jim has served on the OFA Nominations, Trade Show, and Grower committees. He previously served on OFF and was a trustee of the OFA medical insurance program. He is currently serving as the Finance Committee chair and OFA treasurer. Jim and his wife, Jennifer, have owned and operated Tropical Foliage Interiors Co. since 1976. Jim is also a board member of the Westerville Parks Foundation.



Grower At-Large (one elected)

Gordon Elsbury,

Hope, Indiana, is president and head grower of Elsbury's Greenhouse Inc. Elsbury's is a retail-wholesale greenhouse with 65,000 square feet of poly greenhouses and 5 acres of outdoor potted plant production. Crops include spring perennials, herbs, fall mums, and poinsettias. Gordon is responsible for growing annuals and potted plants, soil and fertility, facilities management and maintenance, and advertising. He is a graduate of Purdue University. He worked as an Extension agent for 10 years before starting Elsbury's in 1973. Gordon has served on the OFA Garden Center Committee. He was named as the 1994 Indiana Flower Grower of the year, and is a past Indiana Flower Growers board member.



William Robert (Bobby) Barnitz,

Mason, West Virginia, is vice president of Bob's Market and Greenhouses Inc. Bob's Market and Greenhouses is a family-operated wholesale/retail bedding plant operation and a regional plug supplier. Bobby serves as the general manager in charge of production and assists with sales. He also is responsible for customer service in the plug business. He is a graduate of Gallipolis Business College and has worked in the greenhouse business for 24 years. The company is a Gold Supplier for Ball Seed and has been awarded Ball Seed's Plug Topper Award. Bobby was also named as a 2001 *GrowerTalks* "Up and Comer."



Retail At-Large (one elected)

Jamie Kniffen,

Fishers, Indiana, is marketing coordinator of McNamara Florist. McNamara's is the largest florist in the state of Indiana, with seven retail locations and a design center. Jamie is responsible for advertising, marketing, and sales, as well as coordinating educational and charitable programs. She also assists the president with employee relations and corporate communications. She is also a co-owner of Floraljobs.com, a resume and job posting Web site created specifically for the floriculture industry. Jamie has a bachelor's degree in fine arts and started in the floral industry as a designer.



Jody

Brown-Spivey,

Columbus, Ohio, is owner of Expressions Floral Design Studio, which is a full-service retail florist store and custom design center. She attended the Hixson School of Floral Design and has worked in the industry since 1985. Jody is currently president of Teleflora's Ohio Buckeye Unit, as well as treasurer of the Capitol Area Floral Cooperative. She has won several design awards and is the designer of three winning floats in the 2003 Tournament of Roses Parade. Jody has volunteered at the OFA Short Course, served on the Retail Extension and Short Course Committee, and competed in the OFA design contests.



Ohio Grower (two elected)

Doug Thorsen, Delaware, Ohio, is president of Thorsen's Greenhouse LLC.

Thorsen's is a wholesale greenhouse selling to florists and garden centers. Doug's responsibilities include overseeing managers and staff, and providing leadership and direction for the company. He attended The Ohio State University and has been working in the greenhouse industry since 1986. Doug is currently serving as president of the Central Ohio Growers Association, and has served on numerous civic boards.



Thomas Machamer,

Wooster, Ohio, is president and general manager of Cedar Lane Farm Corp. Cedar Lane is a 300,000-square-foot wholesale greenhouse raising annuals, perennials, garden mums, and poinsettias. Thomas is a graduate of The Ohio State University Agricultural Technical Institute.



Terry Diefenbacher,

Cincinnati, Ohio, is president of Diefenbacher Greenhouses Inc. Started in 1983, Diefenbacher is a 4-acre wholesale greenhouse which sells to non-chain stores. Terry is the head of operations and customer relations. He is a graduate of The Ohio State University and also studied education and teacher supervision at the graduate level at Ohio University. He taught vocational horticulture for six years before starting the greenhouse. Terry assisted with decorations, plant material, and the OFA information booth for several years while the Short Course was held in Cincinnati.



Earl Robinson, New Carlisle, Ohio, is owner/general manager of Meadow View Growers Inc. Meadow View is an 80,000-square-foot propagator of annual rooted cuttings and perennial liners, wholesale and retail bedding plants, and perennials. Earl is responsible for production management and assists with sales and marketing. He is a graduate of the Delaware Valley College of Science and Agriculture and has worked in ornamental crop production for 40 years. An OFA member for 15 years, Earl has hosted garden center and grower tours during the OFA Short Course.



Don Heldman, Galesburg, Michigan, is general manager of Michigan Grower Products Inc. Michigan Grower Products is a manufacturer of professional greenhouse media, specializing in the filling of greenhouse containers. Don's responsibilities include financial management, employee supervision and administration, strategic planning and vision development, public relations, and sales and marketing. He is a graduate of The Ohio State University with work experience in sales and marketing for Ball Seed Company, Pan-American Plant Company, Vaughan Seed Company, Oglevee, and Pargro. Don has served on the OFA Grower Committee and America in Bloom.



Allied At-Large (one elected)

Karl Trellinger, Boulder, Colorado, is co-president and director of technical support and production of Fischer USA.

Fischer's is a breeder and producer of geraniums, poinsettias, and New Guinea impatiens. Karl is responsible for production, variety trialing, and selection. He is a graduate of the Technical University of Munich.



Valerie Eason, Crestview Hills, Kentucky, is co-owner of Eason Horticultural Resources Inc.

Eason Horticultural Resources is a sales company supplying growers and retailers throughout the United States with the world's best sources for young plants, perennials, seeds, bulbs, and nursery stock. Valerie's responsibilities include updating the computer database with new plant introductions, organizing national and regional trade show participation, and recruiting new talent from Midwestern horticulture programs. She is a graduate of The Ohio State University Agricultural Technical Institute. She worked for a local greenhouse and garden center and for Henry F. Michell Company before Eason's. Valerie currently serves on the OFA Industry Newcomer Outreach, New Varieties, and Trade Show committees.



ofa News



July 12-16, 2003
Greater Columbus Convention Center
Columbus, Ohio USA

Registration is now open:
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Dear Editor,

I was delighted to read the recent article (March/April 2003 *OFA Bulletin*) about the Horticulture Department at the University of Georgia. I have, however, a few corrections. The article implied that the University publishes the GFGA Newsletter and *Southeastern Floriculture* magazine. It should be pointed out that the Georgia Flower Growers Association owns and publishes both periodicals. With the gracious support and assistance of the University, Dr. Bodie Pennisi is the editor of the newsletter, and Dr. Paul Thomas is chair of the educational advisory committee for the magazine.

Horticordially,
Denise A. Smith

Chair, GFGA Publications Committee

Editor's Note: With the exception of correcting typos, the article was printed as originally presented by Dr. Thomas.

P. Allen Smith is 2003 Keynote Speaker

Gardening expert P. Allen Smith will be this year's keynote speaker at the OFA Short Course. Smith has become one of America's most recognized authorities on garden design. He regularly appears on The Weather Channel, the CBS Early Show, local newscasts, and his own nationally syndicated gardening show. Smith is also the contributing garden editor for *Woman's Day* magazine and an author. Smith will present his keynote address on Sunday, July 13.

www.ofa.org

OFA Announces New Bookstore at Short Course

OFA is pleased to announce the addition of a new service for attendees of the 2003 OFA Short Course. At the "OFA Bookstore – presented by Ball Publishing," Short Course attendees can purchase OFA publications, Ball Bookshelf reference books and production videos, and other florist, retailing, and gardening titles.

Short Course attendees will be able to purchase reference books and other publications from Saturday to Wednesday. Specific hours of operation will be listed in the Short Course program and posted in the Convention Center.



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