

ASSOCIATION NEWS

Marianne McGloin
Executive Director, D.A.N.

Summer is fast approaching and it is time to mark your calendars for the 9th Annual Summer Turf and Nursery Expo. This year the event will take place on Wednesday, August 21 at Apgar's Sod Farm, Smyrna, DE. The registration brochures will be mailed shortly.

By majority vote, the membership has approved the amendments to the bylaws. A new membership application has been designed and will be printed soon.

Now is the time to prepare for the next CNP exam, which will be held on October, 29 at the Department of Agriculture, Dover, DE. Any questions concerning the exam should be directed to Sue Barton or Marianne McGloin.

Steve Castorani has been working with DNREC, the President of PGMS and a representative from the golf course superintendents group on a water contingency plan for New Castle County. In the future, this should help our members druing the next drought crisis. I would like to thank Steve for his efforts and taking the lead on this committee. We will keep everyone updated on any new developments or information.

The Plant of the Year Selection Committee is in the process of selecting the 1997 and 1998 Plants of the Year. As soon as the nominations are in, the ballots will be mailed.

Quote for the Quarter:

There is never a better measure of what a person is than what he does when he's absolutely free to choose.

William M. Bulger

Have a great spring! Marianne

WELCOME NEW MEMBERS

Active

Beach Plum Gardens
RD 1, Box 273-A
Milton, DE 19968
(302) 645-2170
Elizabeth Bonk, Craig Hudson, Wayne Jester,
Barbara Henrikson

Associate

Aquarius Irrigation Supply
314 W. Basin Road
New Castle, DE 19720
(302) 328-3326
Chuck Carpenter, Robert Beaugoleil

CONGRATULATIONS CNPS!

Tom Zaleski
City of Newark - Parks Department

Terry Lemper
Lemper's Landscaping

Additional specialty titles earned:

Doug Clark, DE River and Bay Authority
Landscape Design Specialist

Chris Sanderson, DE River and Bay Authority
Greenhouse Production Specialist

U OF D NEWS
Susan Barton
Extension Specialist

Keep an eye out for the Ornamentals Short Course Flyer. It should arrive in the next week or so. We are offering two herbaceous plant materials classes. Annuals, bulbs and grasses will be taught at the Research and Education Center on July 9 and 11. Jay Windsor is the instructor. He will also teach Perennials in Newark on July 23 and 25. Dewey Caron and Bob Mulrooney are coordinating a hands-on ipm workshop and pest walk at Winterthur on August 6. This will be a great opportunity to learn to monitor for key pests. Bob Mulrooney is teaching his ever-popular Diseases of Woody Ornamental Plants on August 13, 15 and 19. That's it for the summer, but look for a weed control course taught by Gordon Johnson in Newark in October. And finally, Ellen Baldo, of Designs, Etc. is teaching landscape design over a six week period in late October through early December. She is an excellent teacher. The course will include design principles plus drafting techniques to help you sell landscape jobs.

The Ornamentals Research Expo will be held at the University of Delaware Botanic Gardens on September 5, 1996 from 5:00 until 8:30. Tour research plots, visit new displays including a wildlife habitat garden, and receive a "John Frett plant giveaway."

We have scheduled the Delaware/Maryland Ornamentals and Turf Workshop for December 3, 1996. Look for flyers this fall.

This is my last D.A.N. news issue before my professional leave (sabbatical). Jo Mercer will be editing the next two issues. I look forward to seeing you all at the 1997 Delaware Horticulture Industry Expo in January!

**REDUCING PESTICIDES IN URBAN
LANDSCAPE**
Susan Barton
Extension Specialist

The following is a summary of a workshop presented by several speakers at the 1995 ASHS Meeting in Montreal, Canada.

Current Use - Case Study of Atlanta, GA (Kris Braman):

1600 surveys were distributed to members of the lawn care and landscape maintenance industry in the 20 county metro Atlanta area. A response rate of 24% was achieved. 48% of the responding firms offer pest management programs. Herbicides are applied in the largest quantity (248, 511 lb AI) and greatest variety with 40 different products applied. Insecticides are next with applications of 37,211 lb AI. Twenty-five different fungicides are applied but the volume of fungicide use is only 9,115 lb AI.

According to the professionals, the most common problem on turf and lawns is weeds, followed by diseases and then insects. Shrubs and trees suffer most from insect infestation. Aphids, mites, lace bugs and Japanese beetles provide the greatest problems. Annuals are plagued by slugs, grassy weeds, aphids, rot pathogens and mites. Finally, perennials suffer from crown rot, root rot, aphids, whiteflies and grassy weeds. Evergreen azaleas and crape myrtle are key plants for insect problems. Red tip photinia and azalea have the greatest number of disease problems.

Approximately 40% of the companies that responded offer an IPM program. 82% offer scouting and monitoring and 87% say they spray only when needed. Relatively few companies use the following IPM tactics (soaps/oils, biocontrols, ID of beneficials, insect growth regulators and insect traps).

Both fertilizer and herbicide are applied on a predetermined schedules. Fungicides are sometimes predetermined and insecticides are least likely to be predetermined. Professionals believe that 52% of their customers would pay for scouting; 13% would be willing to accept a quality loss; and 52% favor less pesticide. Landscape professionals feel that IPM adoption is limited by the lack of pest biological information (46%); alternatives that are not as effective as pesticides (73%); the expense (58%), appropriate alternatives are unavailable (66%); and too much time required (60%).

Landscape professionals do not feel they have enough information on plant growth regulators, organic fertilizers, nematicides and alternative pest control products and practices,

Successful Strategies (John Kabashima):

IPM includes quarantines, monitoring, thresholds, control strategies and design and/or redesign of the landscape. Successful monitoring includes regular inspections with a repeatable method such as visual (hand lens, binoculars), beating or sweep nets, traps or ELISA tests. Injury symptoms are also critical in helping to properly identify pests.

Once a problem is determined, management methods include physical, mechanical, cultural (species selection, proper maintenance), biological (best with imported pest with wide host range) and chemical.

When choosing a chemical control method, look at the toxicity of the product (AI/acre), the environmental hazards, formulation, mode or action, selectivity and efficacy. Biorationals are pesticides with less environmental impact and offer opportunities to get control with less toxicity. Employment of proper pesticide

application procedures can also reduce pesticide use. Consider the type of equipment needed, calibrate equipment properly and use the appropriate technique (for ex. spray undersides of leaves when necessary to reach pest). Consider pH, surfactants, irrigation timing and technique, environmental conditions and efficacy when selecting and applying pesticides.

Timing is a critical aspect of effective control. Traps and growing degree day models are helpful in finding the right time to spray and control susceptible insect stages.

Ash whitefly is an example of successful biocontrol. Ash whitefly is an imported pest with many hosts. While this pest is easy to control with a rotation of pesticides, a new population will continue to move in, making regular spraying necessary. Chances for success increase with the use of more than one biocontrol agent. In this case, incarsia wasps were collected from the Mediterranean and lady bird beetle larvae were collected from Israel. The public was educated about the project and encouraged to refrain from spraying to let the predator population build-up.

Achieving Adoption of IPM (David Shaw):

One strategy for achieving adoption is the development of laws and regulations about pesticide use. State Departments of Agriculture require certification for pesticide application on a property other than your own but enforcement is difficult. In San Diego, CA only 67 people are certified applicators but illegal applicators must be caught in the act of applying pesticides to be prosecuted. California has instituted 100% use reporting. Many state promote training by requiring continuing education units to maintain certification. A final regulatory impact is the loss of many previously registered products due to stricter testing standards and registration laws.

A major problem with pesticides is that anyone can buy them in many mass merchandise outlets where little service is available. The printing on labels is so small that many people don't read the labels and there is no IPM information on the label.

Public pressure may also contribute to reduced pesticide use. There is a negative attitude toward pesticides and many consumers are less critical of minor damage to plants and produce. But some problems, such as aphid honeydew, are still unacceptable to most homeowners. High profile adoption of an IPM program can look good for image-conscious landscape companies.

Economics is often a stumbling block for the adoption of an IPM program. Since monitoring is expensive, landscape companies must develop "packages" to market different levels of service.

Many universities, cooperative extension units and public horticulture outlets are providing multi-layered educational programs. They teach a combination control method; offer hands-on workshops in the field; provide publications; help introduce more resistant plant materials; teach proper pest and plant identification and offer application technology training.

Sometimes IPM practices and reduced pesticide-use strategies are adopted because there is no other way to control the pest. These examples can help professionals learn how to apply these principles and techniques to many situations

10 KEYS TO EXCELLENT CUSTOMER SERVICE

Colin Maiorano and Carolyn Eckstein Soule

- 96% of unhappy customers won't tell you they are unhappy
- the average unhappy customer will share the story 9 times
- 13% will tell more than 20 people
- The average unhappy customer will remember the incident for 23 years

Statistics like this show why it is so important to have a strong emphasis on customer service. In order to implement this kind of focus you need to do a few things. First, have an open dialogue on what customer service means. To generate ideas, ask yourself these questions. If I were a customer how would I like to be treated? Where do I get excellent customer service currently? What specifically do these businesses do differently? And, how can I adopt these concepts into my own business? Next, put your customer service policy in writing. If you deal in generalities, your policy will be ambiguous. The more specific you are, the better your policy will be. And third, constantly reinforce and encourage your policy until it becomes habit. One way you can do this is take the first ten minutes at the start of a weekly meeting to recognize and praise employees who have done an excellent job serving the customer. This constant reinforcement convinces employees you are serious and teaches them how to respond in different situations. Here are a few ideas to help develop your customer service policy:

1. Treat your employees the way you want them to treat the customer. If you are not serving the customer, you better be serving someone who is. Think of your employees as internal customers. They observe how you treat them and handle your customers the same way. If you help your

employees as much as possible, they will help your customers anyway they can.

2. Listen to your customers. They will tell you what they want. Many customers are flattered when you ask for their input. A simple survey to find out how you can better serve them can give insight into many ways to increase sales. Your customers are saying, if you do this, I will buy more from you.

3. When you spend unplanned money to satisfy a customer, don't think of it as lost revenue. Think of it as marketing. The money that you think you lost will more than pay for itself in word-of-mouth advertising. How much do you spend on advertising? You can spend thousands on newspaper ads or spend a few hundred going the extra mile to solve a problem. Customers who have their problems solved quickly and professionally become loyal and provide the most referrals.

4. Customers don't care what you'll try to do. They only care what you will do. A conservative guarantee is better than an uncertain but flattering claim. Remove the words try and should from your vocabulary. There is always something you can definitely do. If you promise to have some information by 2:00 p.m. and when the time comes you still don't have the information, at least call the customer and update them on the situation.

5. Everything about your business conveys an image. Sometimes we think our main products reflect everything about us. But trucks, signs, ads, stationary, business cards, and especially employees also contribute to that image. A seemingly small detail, like a dirty truck, could cost us a new customer.

6. Under promise, Over deliver. If you promise delivery of your product in 48 hours, get it there by 36. If you estimate a bill will be \$100, and

find you can handle the job for less, do so. Find something extra to give your customers. And it doesn't have to cost money. It could be a friendly smile, a thank you note, or a sincere complement.

7. When customers complain, they are doing you a favor. For every customer who complains there are twenty customers who are unhappy but haven't told you. So, not only do you lose the silent customer's business, but you also have someone discouraging their friends from buying your product. Therefore, an angry customer is an opportunity. If you handle it properly, you can turn them into loyal customers who give referrals and tackle an unknown problem.

8. Customer service is a trump card. When a policy conflicts with customer service, satisfy the customer. A doctor I knew had all of his investments and insurance with a major financial company. He bought a BMW 850i and when he went to transfer the insurance he found that it was the company's policy to not insure the car. He kept getting the run-around and finally withdrew all of his investments to do business with a different broker. His portfolio was worth over \$12 million.

9. Use simple language. When we work in our industry long enough we become familiar with certain language that is still foreign to the rest of the world. Even though we heard something a thousand times, it may be only the first time for our customer and therefore we must be sensitive to their needs. This point was driven home to me when I recently read about the response a computer help line was getting when talking to new users. When one customer service rep asked if a program was working under windows, the user responded, "No, but my co-worker has his computer under a window and his program is working fine." Another staff member received a call about some financial software. He said a computer was necessary to run the

program to which the caller replied, “It’s a big scam. You never advertise that you need a computer.”

10. Get someone your employees are unfamiliar with to shop at your business and check the customer service. Just ask a friend to shop at our business and check for certain things. These principles can be guidelines as you implement your customer service policy. It is all about gaining and retaining customers. All policies, procedures and job descriptions stem from this. What happens too often is employees get caught up in the job description and lose sight of the big picture. They miss an opportunity because it’s not their job. But in the context of customer service, everything is their job. The best service they can provide is to not pass the buck.

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CHANGES TO DELAWARE’S TAX CODE

The Internal Revenue Code currently allows a deduction of 30% of the premiums paid by a self employed individual for health insurance premiums for individuals and their dependents. The amount of the federal deduction passes through to the individual’s Delaware personal income tax return and has changed during its history.

The State currently allows a self-employed individual to deduct 50% of the value of health care premiums (in addition to the 30% allowed at the federal level.) Because the State piggybacks on the federal return, the net effect is to allow small businesses to deduct 80% of their premiums for the tax. This Act will increase the State deduction for self-employed individuals, including shareholders of more than 2% of the stock of a Subchapter-S corporation to a total of 100% of the cost of such insurance.

This Act will be effective for tax years beginning after December 31, 1995.

A BROWN PATCH PARADOX SOLVED?

Paul Vincelli

For some time, I have puzzled over the following. Brown patch of tall fescue often seems to be more severe in sunny areas than shady areas within a landscape.

However, a very nice, controlled-environment study published several years ago showed that tall fescue plants exposed to a four-week period of shaded conditions makes tall fescue plants more susceptible to infection by *Rhizoctonia solani*, the cause of brown patch. It was a nice study, very carefully simulating the spectral characteristics found beneath common shade trees. Furthermore, it showed very clearly that shade increased plant susceptibility to infection rather than making a more humid environment favorable for growth of *Rhizoctonia*. Very nicely done.

So why this apparent discrepancy over the effect of shade on the disease?

A recently published study at the University of Nebraska may have provided some insight. The researchers found that more dense tall fescue turfs were more favorable for brown patch activity. We have seen the same thing at UK where we have seeded tall fescue at different seeding rates. The Nebraska researchers showed nicely that the filamentous mycelial growth of *Rhizoctonia* from leaf to leaf was greater in the denser turf, confirming why a dense tall fescue has more brown patch activity.

However, what was new and exciting was this. The researchers found that turf density was much more important in determining how much brown patch developed than was inherent susceptibility of the variety to infection by *Rhizoctonia*. This had never been shown before, to my knowledge.

This finding has significance in two ways. One, it stresses the importance of field evaluations for determining the susceptibility of tall fescue varieties to brown patch. Growth chamber tests also have some value, but the field evaluations are critical. Second, it may give a clue as to the shade/brown patch paradox. Tall fescue under shade has a more open canopy and growth habit. Perhaps the more open canopy in the shade reduces brown patch pressure to more than compensate for the higher susceptibility to infection in the shady environment. Ongoing research will help clarify this, but it is nice to at least have a good hypothesis on which to ponder. Thanks to Gary Yuen (University of Nebraska Plant Pathologist) and A.J. Powell UK Turfgrass Agronomist) for reviewing this article.

Reprinted from *Kentucky Pest News*, April 22, 1996.

MOON NURSERIES Career Opportunities

Sales Representatives/Sales Support Personnel - We are looking for individuals to join our sales staff to augment in-house sales, telemarketing and new territory development. Candidates should be well-versed in plant material identification.

Container Production Assistant - We are looking for divisional managers for our expanding container operation in Chesapeake City, MD. Opportunities exist in inventory control, shipping, plant maintenance and other production-related areas. Applicants must be result-oriented with strong management and communications skills. A degree in Ornamental Horticulture or related experience required.

Wholesale Yard Manager - Our Bucks County, PA wholesale yard is expanding. The individual needed to manage this facility will be responsible for its overall success. Must have good knowledge of plant material and 4-5 years experience in horticulture field.

Send resume to: Moon Nurseries, P.O. Box 482, Yardley, PA 19607, Attn. John Pursell

BAILEY NURSERIES WORKS HARD TO RETAIN ITS WORKERS

How does a large wholesale nursery industry with very high turnover keep good seasonal and full-time employees from year to year? At Bailey Nurseries, Inc. In St. Paul, Minnesota, a large part of the answer is adapting to a changing work force's needs.

"At times, two-thirds of our work force is Latino" says Joe Bailey, assistant human resources manager and safety director. "This ratio has completely changed in the last five years."

What does this mean for Bailey's managers? It means making a concerted effort to:

- learn Spanish to foster better communication and understanding with employees
- use current and past Spanish-speaking employees to help recruit new workers
- carefully explain job duties and working conditions to potential hires so they know what to expect

Making workers comfortable

Bailey Nurseries, one of the country's largest producers of bareroot trees and shrubs, has about 200 full-time and as many as 450 seasonal employees in Minnesota. The nursery has another 345 employees in its Oregon locations.

"It's not unusual for me to run into co-workers who have been here five years or more. And we have a large group of people who have been with the company more than 15 years," human resources manager Jeff Pofertl says.

Among the ways Bailey's managers work to increase employees' comfort levels are:

- *By learning to speak Spanish.* Everyone in Pofertl's department is either fluent in

Spanish or is learning to speak the language. “Our company is strongly encouraging everyone from the assistant foreman level on up to the president to take Spanish classes,” Pofperl says.

- *By holding weekly “Speak-Up” meetings.* These sessions - held in both Spanish and English - are a means for small groups of full-time employees to give managers and owners honest feed-back on any topic they want.
- *By promoting an open and casual atmosphere.* The owners often wear jeans to work and are open to speaking with anyone. “This is really a matter of basic respect,” Pofperl says.
- *By encouraging decision-making among employees.* “People are given a lot of responsibility for getting the work done in their area,” Pofperl says. “For example with pruning, people are given the training to do it - but no one stands over them or tells them which branches to prune.”

Recruiting good workers

Joe Bailey, who is fluent in Spanish, has worked extensively with past and current employees to recruit new seasonal workers.

“I have received help from some of our retired workers who now live in diverse communities in other parts of the country,” he says. “We also build on the base of people we have now. Part of my job is to work with our current employees and ask them to refer friends and relatives.”

The result of the effort was that “just about everyone who came through our door last spring had a reference,” Bailey says.

A key to keeping these workers once they arrive is to be sure they are “mentally prepared” for the work.

“The biggest thing when you’re hiring them is to be up front about the working conditions,” Bailey says. “We use a lot of pictures of different jobs. The most useful ones show planting, digging and field maintenance jobs, along with the unpredictable Minnesota weather.”

Bailey’s New Employee Checklist:

1. **Greet with smile and welcome new person.** Let them know their addition is important to you and to the company.
2. **Stress the importance of their role** and why he job is important to the company and the customer.
3. **Be enthusiastic.** Stress your own goals and indicate your quantity/quality standards.
4. **Ask for input.** Be a good listener.
5. **You are as good as the people you develop around you** - set high expectations.
6. **Go over a few things** such as: how to dress under certain weather conditions, breaks, attendance, call-in expectations, etc.
7. **Follow up at the end of the day** with some POSITIVE reinforcement. Find something the person has done well so that he leaves feeling good about coming back the next day.

Reprinted from *Gempler’s Alert*.

DISCULA ANTHRACNOSE OF FLOWERING DOGWOOD - An Update

**Anne Sindermann, Plant Pathologist, M.D.A.
Ethel Dutky, Plant Pathologist, Univ. of MD**

Discula anthracnose (dogwood anthracnose) of flowering dogwood became widespread in Maryland (*and Delaware*) in the early 1980's. It is present throughout the state and losses have varied with the weather. In hot, dry seasons, little *Discula* is noted. In cool, wet weather that is ideal for the fungus, *Discula* spreads readily and damage may be more evident the following year. This is because the fungus can grow down the epicormic shoots (or "water sprouts") and invade the main trunk, advancing in fall and winter to be evident as dead trunks and branches the next spring. The advance of the fungus into main trunks is the reason that this anthracnose disease is so serious. Most of the tree anthracnose diseases cause twig cankers and may lead to bunched twig growth (as in sycamore anthracnose) but not death of main branches and twigs.

Some History

Symptoms of the disease have been reported in the United States since the late 1970's. First called a lower branch dieback, it was later called dogwood anthracnose and the fungus *Discula* was consistently associated with the disease in the northeastern United States. In 1991, Dr. Scot Redlin of the USDA Agricultural Research Service in Beltsville, Maryland described and named the pathogen *Discula destructiva*. He also compared samples of the fungus, including those from the east coast *C. florida* and west coast *C. nuttallii*, and concluded that this *Discula* was indeed different from those causing anthracnose of ash, oak and sycamore (Redlin 1991). With the identification of the fungus now clear, questions about the origin of it could be better addressed.

In short, scientists have decided that it was introduced. It first appeared near major ports (Seattle and New York), spread rapidly and was lethal. Analysis of the DNA showed little genetic diversity also indicative of a recent introduction. If it had been here longer, more genetic variation would be apparent. Deciding it was introduced and proving it so are different and since it has not been found on *Cornus* outside of North American, the source remains speculation.

Recognizing the Disease

There are many symptoms of dogwood anthracnose. On a tree with advanced anthracnose, lower branches will be dead, many epicormic shoots will be present on trunks and large branches with cankers. Leaves have purple rimmed spots with tan centers and in wet weather, large areas of the leaves may be blighted. If it's wet and cool during flowering, bracts will have spots as well. In a well-maintained landscape tree, with a relatively new case of anthracnose, only leaf spots may be evident. The key factor in distinguishing this disease from other dogwood leafspots is the fungal fruiting structures. Within blighted or spotted areas of the leaves, small tan to brown dots will be present, uniformly distributed on the tissue. A hand lens will be helpful, but is not necessary if the sample is in good condition and you know what you're looking for.

Disease Spread and Impact

Spores of the fungus are spread in rain storms. Due to the long distance rapid spread of disease in forests and landscapes, other means of dispersal have been investigated. One idea still under study is insect dissemination. Fungal spread through fruit and seeds, which also implies birds are moving the fungus about, is also possible. Infected nursery stock is clearly another way the disease is spread and has been the focus

of outbreaks into Missouri, Kansas and other states in the central U.S.

The range of the disease is primarily along the Appalachian Mountain range and the impact there is startling. In Maryland, the losses in the Catoctin National Park dogwoods have been immense. Not only are most trees dead, but few seedling survive in the heavy pressure from *Discula*. Some seedlings have survived and are being studied for possible traits of tolerance to dogwood anthracnose. The loss of dogwoods affects wildlife that eat the fruit as well.

In landscape situations, the impact of dogwood anthracnose is somewhat more encouraging. Most valuable specimen dogwoods, especially those under stress, were lost to dogwood anthracnose in the first decade that the disease was present in the Northeast. However, it has been noted repeatedly that dogwoods in open to lightly shaded sites survived and recovered. Apparently the lesions on leaves in full sun expand less rapidly and secondary infections are reduced because there is less moisture and better air circulation. Drought is also documented as a predisposing factor to severe dogwood anthracnose outbreaks (another reason that we predict a bad year for dogwoods).

Disease Management

Proper tree placement and excellent cultural conditions are the best defense for dogwoods. Avoid heavy fall or spring fertilization that would promote flushes of growth during optimal weather for infection. Provide good irrigation, preferably an irrigation system that does not wet the leaves and spread fungal spores. And at least 30% full sun. Dogwoods are shallow-rooted trees, so a layer of well-aged bark mulch each year is advisable for good root health and reduced competition from other plants, people and mowers. Protectant fungicides (chlorothalonil, mancozeb, thiophanate methyl) are required in

areas of heavy disease pressure, or to restore valuable trees following a diagnosis of *Discula*. Fungicide sprays should be applied as the new leaves emerge and for every 7 to 14 days that there is cool, wet, spring weather. Propiconazole, a systemic fungicide, is also labeled for dogwoods and would be needed probably only once in most typical springs. Poor results have been reported with trunk injections of fungicide for this disease.

Cornus kousa has been widely planted as a substitute for flowering dogwood and is relatively resistant. Other *Cornus* have performed well under dogwood anthracnose pressure as well. Often people really want the closest thing to a white or pink flowering dogwood that they have lost. Hybrids of *C. florida* and *C. kousa*, released by Rutgers University are an option. The trees are named under the Stellar series and have varying amounts of resistance to the fungus but not immunity, so time will show which are the best selections for this area.

The Big Question . . .

Should you spec., install or claim to be able to maintain flowering dogwoods in the landscape? We say yes, but with reservations. They are not maintenance free. Providing optimal cultural conditions and monitoring for anthracnose are mandatory. Fungicide sprays may be required in certain years. The new hybrids, though not really the same as *Cornus florida*, provide a more disease resistant choice. If *C. florida* is the only thing that will do, providing at least 30%% sun, good soil moisture, thoughtful use of fertilizer, and a willingness to use fungicide when necessary will mean success with dogwoods.

References

Daughtrey, Margery L. et al. 1996 Dogwood Anthracnose - Understanding a Disease New to North America. Plant Disease 80:349-358

Redlin, Scott C. 1991. *Discula destructiva* sp. nov., Cause of Dogwood Anthracnose. *Mycologia* 83:633-642.

Reprinted from *Free State Nursery News*, May 1996.

CLEARING POND WATER

Dan Terlizzi, Sea Grant Water Quality Specialist, University of Maryland

Turbidity or cloudiness in pond water is caused by several factors ranging from excess phytoplankton growth to silty runoff from adjoining land.

Phytoplankton are a natural part of the pond with seasonal cycles of growth and decline requiring specific plant management techniques. The “mineral” turbidity found in ponds is due to colloidal particles (clay) suspended in the water column. This is a fancy way of saying that these particles are so small they float rather than sink. Clay particles are usually negatively charged. These charges on colloidal particles help keep them afloat by their attraction to the positive charges on water molecules. When the negative charges on colloids are matched by the positive charge of a treatment chemical, the clay settles out. This chemical precipitation, termed flocculation, provides the basis for the treatment of turbidity.

Management techniques for turbidity deal with the aesthetic problem of cloudiness in the water. However, ponds that are excessively or routinely turbid will require more direct solutions; for example, diversion mechanisms to reduce runoff into the pond and sedimentation basins at points of entry to allow for sedimentation before water enters the pond. If your pond has an occasional problem with turbidity the following treatments may be helpful.

One of the oldest and simplest techniques is the application of organic matter, hay or manure, to the pond. Studies conducted in the 1950s showed reduction of clay turbidity following application of 100 to 1,000 lbs. of hay per acre-foot (the area of the pond multiplied by the average depth) or 1,000 lbs. of manure per surface acre. The precipitation of clay may be a result of changes in pH during decomposition of the hay but the exact mechanism is unknown. Because of the potential for oxygen depletion, and certain aesthetic considerations, organic materials are not used as often as other clarifying techniques.

Other effective methods for the treatment of turbidity are available including application of alum (aluminum sulfate), slaked lime and gypsum. Alum is the most effective of the three. All chemical treatments influence other parts of water chemistry and should be made only when necessary and after careful calculation of your pond size or volume and treatment rates.

Studies conducted at Auburn University by Dr. Claude Boyd showed that application of alum at up to 20 mg/liter reduced turbidity. Alum does not appear to be toxic to fish at these levels. However, application of alum reduces alkalinity that can lead to lower pH. Alum applications should be made as uniformly as possible over the pond surface and mixed evenly using an aerator.

Slaked lime (calcium hydroxide) is effective in water clarification at concentrations about twice those required with gypsum. Although economical for use in water clarification, slake lime is strongly basic in water and will usually increase the pH. Increased pH can lead to fish mortality directly or by increasing the toxicity of ammonia, the primary waste product of fish.

Gypsum (calcium sulfate) has been used to clear pond turbidity; however, it is much less

effective than alum. Studies conducted at Auburn University demonstrated that up to 20 times as much gypsum was required to achieve the same clarity resulting from alum treatment. The fact that alum is less expensive than gypsum and that less alum is required for clarification presents a strong economic incentive for its use. However in soft water situations the use of gypsum would have the added benefit of increasing hardness.

GARDEN CENTER INVENTORIES: PLANTS AT RISK?

Fred Duis
Duis Nursery, Bedford, VA

While making a late summer visit to several garden centers in the Roanoke area, I was overwhelmed by the wide ranging quality of inventory. Few of the garden centers had stocked for the fall, so what I saw was stock left from the spring selling season. Quality of plant material varied from “well kept” to “poorly kept.” The stock at “vertically integrated” businesses (those businesses that grow plants from one stage to another, thus receiving value added revenues at each stage) were generally in good shape. It was obvious that the presence of a professional horticulturist resulted in the proper decisions being made concerning plant care. However, at other sites, many plants were yellowed and stunted and it was obvious that little attention had been paid to them. Some of the businesses had either chosen not to do those things that would have carried their inventory through the summer with vigor or, more possibly, they did not know the things to do.

In Central and Western Virginia, we do not have the mega-markets enjoyed by our green brothers and sisters in Northern and Eastern Virginia. Many of our green businesses must diversify so they can maintain a more even cash flow. It is understandable that some garden centers have not practiced even basic plant husbandry, other

than watering, because they are involved in other enterprises. In fact, many of our garden centers are not “green businesses” at all but “add on’s” to existing businesses: farm supplies, hardware, lumber, mulch and topsoil, etc. Consequently, they usually do not have professional horticulturists on their staffs because green sales don’t warrant it. However, this lack of “in house” expertise creates a catch-22 situation: modest plant sales don’t justify hiring a staff horticulturist; untrained help does not do the things necessary to maintain quality stock; poorly maintained stock is unattractive which reduces demand; sales are slowed; plants hang around longer; the longer plants hang around the worse they look; demand is reduced even further; revenues are lowered; hiring a professional has become out of the question. It may be that such a business should take whatever means necessary to liquidate poor quality inventory. Getting rid of substandard plants would improve the looks of the property and make room for fresh stock.

There are several strategies for reducing inventory:

1. Lower prices as seasons progress until inventory is gone. At the ends of spring and fall seasons, plants are a liability. No one seems to want them because they either require special care or potential customers have turned their attention to other things. Lower prices will probably not clear out all inventory.
2. As a general rule, even during your busiest season, discount larger purchases - 10% off a purchase of over \$50, 20% off over \$200. Allow discounts on plant prices even if your customer has bought unrelated inventory such as paint, hardware, or mulch.
3. Work with area landscapers or develop a landscaping capability yourself. (It is not

necessarily unethical to use plants with which you are overstocked on landscape jobs). Let your sales lot be an inventory lot for landscapers. Discount 25% to landscapers who are repeat customers and who PAY. Adopt the philosophy that plants must move through your business rapidly - it is very easy to reorder.

4. Donate all of your excess inventory to charitable institutions at the end of seasons. Habitat for Humanity may be interested as well as your local school board.
5. Buy a shredder and grind up your inventory. Compost it and sell it to Master Gardeners.

Even pot bound, yellowed plants have potential for growing on, so dumping them or selling them for little or nothing is an expensive proposition. Becoming “vertically integrated” (growing plants on) may be a solution for tired inventory. We growers are faced with similar dilemmas late in the spring when we have to decide to take plants out of a marketing context and put them in a growth context. This decision is based on the realization that sales are slowing, the growing season is getting shorter, the plant is not increasing in value and each square foot of our growing area is not maximally productive. So, if a grower determines that a particular plant will not be sold, it has more value as a liner. By the end of the growing season, many one gallon plants can make salable three gallon plants, 2's to 5's, 3's to 7's and so on. Garden centers and landscapers would do well to consider their inventory in a similar way, by recognizing its potential as compared to its present value. Vertical integration, as I have described, requires space for activities that may not be suitable for prime retail space. Watering is messy in a sales area. Pruning is a must, but many plants look less than desirable afterwards. Spraying is an unfortunate necessity, but the

public becomes more alarmed about the use of pesticides all the time.

Nurseries and nursery associations might join together to help garden center operators (GCO's) handle our products. Adequate knowledge about plant culture might reduce a GCO's hesitancy to stock a critical mass of plants, especially in the fall. If GCO's were not afraid of inventory, they could stock their garden centers to those levels that would bring in customers - customers who want choices.

Voila! We live in the “information age” and therein may lie the answer. In the information age we are learning that we can substitute information for experience, i.e. we don't have to grow up on farms to know how to grow potatoes - just look on the Internet or read a newsletter. We need to use our arsenals of computers, faxes, and copiers to generate the information that will make all of us who are responsible for plant care better at it.

Perhaps, we need a series of “fact sheets” to accompany each shipment of plants. Over time, these fact sheets could take the form of an owners manual as they are compiled in a loose leaf notebook. Each sheet could be arranged much like a page in Dirr's Manual of Woody Landscape Plants. Each sheet could relate information about a specific plant. Much of this information is now available but not in a single source. Also included could be anecdotal information based on the experience of growers. GCO's and landscapers. The purpose of the fact sheet would be to introduce to the new owner of the plants those basic procedures - fertilizing, spraying, overwintering - that must be followed in order to maintain quality. It is hoped that by following the simple procedures on the fact sheet, the GCO would not be faced with the dilemma of declining quality during the selling season or of stressed, substandard plants at the end of the season. Furthermore, at the end of

the season, he could more easily reduce his inventory - either by marketing a better looking plant at a reduced price, by overwintering on site, or by deciding to use that better looking plant as a liner to be grown on.

A fact sheet should include some of the following information:

- 1) **Exposure:** sun, partial sun, shade.
- 2) **Fertility:** express in practical terms as stated on bags of Osmocote, for example oz. of fertilizer per gallon of container, best type of N carrier, optimum pH.
- 3) **Insect problems:** List those pests that will definitely be a problem. Include a description of the pest and of its manifestation. On azaleas, for instance, spider mites and lace bugs are a problem at the same time every year. They are relatively easy to control, if anticipated.
- 4) **Fungal problems:** These vary with seasons and with watering practices - but they always seem to need attention. With overhead, daily watering all seem to be made worse. Of particular note are leaf spots, leaf anthracnose, phytophthora wilt, phytophthora die back, etc. Include a description of disease manifestations and remedies.
- 5) **Hardiness:** It is easy to find information about the hardiness of a particular plant. However, an unprotected container grown plant is usually more vulnerable to temperature extremes than one of the same species that is established in the landscape. Many of our container grown ornamentals need special care during the winter months. Root systems of many species that are otherwise hardy can not withstand severe or prolonged freezing. Early spring shipments of plants that have been in holding houses for the winter are quite susceptible to hard, late spring freezes. These

plants can be several weeks ahead of the season although growers take every means to keep plants dormant. In the fall, containerized plants may be in a growth state later than field grown plants. GCO's need to be able to provide temporary protection from untimely freezes that occur in spring or fall or long term protection during the winter.

- 6) **Cultural practices:** Mention should be made of how long a plant can stay in its given container, when it will need to be pruned, and other special instructions such as deadheading flowers on repeat blooming daylilies.

In addition, and on a separate sheet, appropriate information could be included on a "culture card" about how recently the plant has been sprayed or fertilized and with what. Has the plant been fertigated? Has it been topdressed? What fertilizer was used? When will it need fertilizing again? When was it sprayed or has a fungicidal drench been used? Was a systemic insecticide used that will give long term protection? Could that systemic insecticide pose a danger for children?

The development of these "fact sheets" and "culture cards" could be in connection with classes for GCO's that could be taught by growers and our best garden center managers. I am not implying that we growers know everything there is to know about plants, but we are at least familiar with our products and we know what it takes to protect them during winters and how to increase their value during growing seasons. We could give practical tips about how to care for our products. Containerized ornamentals are very dynamic. Proper care can insure that they will have a pleasing appearance for an extended period. Improper care can mean they will deteriorate rapidly. Optimally, when a plant goes from its niche in a growing environment at a nursery to

display environment at a garden center, conditions for the plant will not change.

Reprinted from VNA Newsletter, Sept./Oct. 1995.

CONTROLLING WEEDS IN TODAY'S ENVIRONMENT

**Frank Gouin, Professor Emeritus
University of Maryland**

A weed is any plant competing for water, light and nutrients with a desired crop. We have waged war on weeds, and as you drive through the Maryland and Delaware countryside you can see that the weeds are winning. I recently drove by a nursery that had been abandoned for about four years, and if I had not known that a nursery had existed in that location and spotted the rows of arborvitae and pine left behind, I would have concluded that it had been an abandoned pasture. I remembered that nursery when it was prosperous and relatively clean of weeds.

Despite the fact that we have an arsenal of equipment and chemicals designed exclusively for fight weeds, it is good to remember that if it were not for the persistence of weeds, our soil would soon wash away. The tenacity that weeds possess assures me that they have a purpose, and despite our best efforts to eradicate them they will overcome.

Our attitude toward controlling weeds has changed substantially in the last decade. Nurserymen who grow their nursery stock in fields no longer try to maintain 100% weed control during the field's lifespan. We may strive to achieve 100% weed control when the plants are small, but as plants grow larger we have finally realized that larger plants are less affected by competing weeds. When the plants have reached marketable size and the fields are at least half harvested, efforts to control weeds are considerably reduced primarily because it becomes less profitable to do so.

To the nurseryman growing plants in containers, weed control is a necessity. Because the plants are growing in a limited volume of rooting

substrate with a defined amount of water and nutrients, one cannot afford to allow any weeds to compete. Physically removing the weeds from containers results in the loss of rooting substrate and requires hard labor.

Weed control has become an area of specialization. Today's weed control expert must take into consideration, in addition to his or her knowledge of the physical and chemical methods available, economical and environmental impacts. Questions most frequently asked are: What is the best method of controlling weeds? When is weed control an asset? When does weed control become a liability? What are the possibilities that the herbicides used are likely to contaminate surface and ground waters, drift onto adjoining property or create a soil residue problem affecting succeeding crops?

We all recognize that sanitation is the most effective means of minimizing weed, disease, insect, and mite problems. As simple as it may seem, sanitation is difficult to achieve especially if it is not part of our cultural program. Preventing weeds from going to seed in the nursery and surrounding areas should be our first step in weed control regardless of the cultural methods being employed. Weeds and their seeds can be transported by wind, water, people, animals, and equipment. Although our soils are contaminated with billions of weed seeds, which may remain dormant for decades, allowing fresh weed seeds to infest the nursery encourages the production of more weeds. Fresh weed seeds have a higher percent germination than aging weed seed.

Mowing is a very effective method of preventing weeds from going to seed as is light but frequent cultivation, directed sprays of postemergent herbicides such as Roundup, Fusilade, Vantage, Snapshot, Gramoxon, Diquat, etc. applied before the weeds form seed

heads are also useful but require special knowledge and equipment to maximize their effectiveness. You must know how each product functions and how each spray affects the weed species. There is no such postemergent herbicide that does it all at any time. Like us, they each have their individual idiosyncrasies.

Although we place much emphasis on the use of preemergent herbicides in producing nursery plants, we fail to consider the importance of timing applications, the build-up of resistant weed species, residues that can accumulate in certain soils and the impact that soil texture and light can have on the effectiveness of these materials. Preemergent herbicides have been both a blessing and a curse to many nurserymen. They have either facilitated weed control or they have not controlled weeds. They have promoted the growth of our crops through better weed control or they have injured or killed some crops. Some years they have been 100% effective while other years they have been 100% failures.

I predict that nurserymen will soon be making greater use of directed applications of postemergent selective, translocated or non-translocated herbicides in combination with cultivation to control weeds. Preemergence herbicide use will be limited to bed and container cultures only. We will make greater use of Nebraska or flat blade cultivators. Nebraska cultivators function much like a root pruning blade but penetrate only ½ to 1 inch below the surface of the soil. When used on a bright sunny day, it is 100% effective in controlling small weeds. Combining cultivation using Nebraska cultivators with directed spray applications of post-emergence selective herbicides is likely to produce more consistent results than what is currently being achieved using preemergent herbicides alone. As the availability of selective translocated and non-translocated postemergent herbicides increases,

combined cultivation with directed postemergent herbicide application becomes increasingly feasible. We have the equipment such as nozzles, pumps, wicks, etc. available to apply postemergent herbicides accurately and effectively. Postemergent herbicides are not likely to become environmental problems as broadcast or band applied preemergent herbicides, because most become part of the plant system and cannot move with soil particles or through the soil profile.

The time has come to re-evaluate weed control programs and to select methods that are environmentally friendly and cost effective. Weeds are here to stay, and it is best that we learn to cope with them in a safe and effective manner. We know the benefits of weed control, but we are also aware of the water pollution problems that some of the preemergent herbicides are creating. We also realize that frequent cultivation with conventional cultivators destroys soil organic matter and often does not adequately control weeds. New designs in cultivators combined with improved postemergent herbicides can provide us with the best of both worlds.

Reprinted from *Free State Nursery News*, August 1995.

PLANTS WITH COMMERCIAL PROMISE: An Insider's Track To Future Profits

Michael A. Dirr
University of Georgia,

Editor's Note: This article by Michael Dirr and the following by J.C. Raulston feature plants recommended for the nursery trade. New plant introduction has always been problematic for the nursery industry. The lead time necessary to grow a plant and the issues of awareness (industry and consumer), demand and supply create a constant dilemma. These next two articles contain the opinions of two renowned plantsmen. Hopefully they will help growers decide what to grow and help garden centers decide what to ask for in the next century!

I have chosen a mini-palette of plants to feature at the Southern Plant Symposium in Raleigh, NC, that have consumer appeal and relative ease-of-culture. Often the introduction of a new plant results in a succession of pretenders to the throne. It becomes difficult to assess the attributes and liabilities of the new plants because they have not been adequately evaluated and tested for garden worthiness or grown under nursery conditions.

I have also discovered that plants which appeared to have little commercial worth were embraced by the nursery industry because of ease of production. A few examples include *Hydrangea quercifolia* 'Alice', *Viburnum dilatatum* 'Mt. Airy', *Prunus laurocerasus* 'Majestic Jade', and *Acer rubrum* 'Edna Davis'.

In a real sense, the nursery industry is the ultimate arbitrator of the worth of new plants.

The following represent a mini-sampler of potential new items with profit potential.

Loropetalum chinense var. Rubrum - (Pink-flowered Chinese Loropetalum). At least 10-forms, some renames, lots of confusion; not all pink loropetalums are the same. My current thinking on the various clones...

'Blush'

'Burgundy'

Dirrclone

Fire Dance™ (Piroche)

Plum Delight^R (Hines)

Razzleberri^R (Monrovia)-similar to 'Blush' and variety *rubrum* (Piroche)

Var. *rubrum* - similar to 'Blush', 'Razzleberri'

'Ruby (Huo)

'Sizzling Pink' - (Microplant, Heritage)

'Small leaf form' (Huo)

'Variegata' (Huo)

'Zhuzhou Fuchsia' (Huo)

Clethra alnifolia - (Summersweet). Wow! 'Hummingbird' is superb. Have over 20 clones. 'Compacta', 'Ruby Spice' and 'Fern Valley Pink' are excellent.

Ilex glabra - (Inkberry). Fifteen clones. 'Nigra', 'UMASS', 'UGA', and 'Nova Scotia' may become the next commercial generation.

Fothergilla major and *F. gardenia*. Most of you know the story on this. Mt. Airy' has proven outstanding.

Itea virginica - (Sweetspire). Native shrub with lots of curb appeal if domesticated. New selections like 'Henry's Garnet', 'Longspire', 'Sara Eve', 'Saturnalia' and the compact forms from Richard Feist offer superb color and fragrance for North American landscapes.

Ulmus parvifolia - Lacebark or Chinese Elm

Without selection and marketing this species would never have risen to its current level of prominence. A case study in what it takes to bring a new plant to market.

PLANT SELECTIONS FOR 1996 AND BEYOND - A Preview To The Southern Plant Conference

J.C. Raulston
NCSU Arboretum

The following list of plants was presented by Dr. J.C. Raulston - The NCSU Arboretum, Raleigh, NC at the SNA 95 business-building Seminar at the annual SNA Trade Show in Atlanta on August 4, 1995.

Pachysandra terminalis 'Green Sheen' - much more heat tolerant selection; improved foliage with glossy sheen.

Muhlenbergia dumosa - 'Bamboo Muhle' grass from Arizona (Z7-9); most beautiful textured grass; seed, divisions.

Baptisia arachnifera - native to Florida (from Woodlander's) - silver grey, eucalyptus-like foliage; striking accent in garden.

Parthenocissus quinquefolia - 'Variegata' - appeared in trade in New England - moving south; striking white variegated leaf.

New range of bulbs for south (Scott Ogden book) beyond Holland products; *Lycoris* from China (20 taxa at NCSU now).

Canna x 'Stuttgart' - THE hot new canna for the future; magnificent white variegated foliage - unique among cvs. ('97).

'New crops' in expansion of 'northern plants' to south - e.g. Daphnes - *D. caucasica*, *D.* x 'Carol Mackie', *D. genkwa*.

Diversity in native southeastern plants e.g. *Hypericum quercifolia* 'Pee Wee'.

Hypericum gallioides - evergreen, compact, small leaves, covered in tiny starlike yellow flowers in August.

Rhus copallina (unnamed cv. Being patented) - deep purple foliage all summer through heat; striking and great fall color.

Zenobia pulverulenta 'Woodlander's blue' - ericaceous plant; selection with blue foliage; white flowers best fall color.

Styrax younae - extremely rare Texas endemic thought extinct; beautiful small 4' shrub with large white flowers.

Cercis canadensis ssp. *texensis* 'Traveler' - patented weeping redbud with glossy foliage. Dan Hosage, Madrone Nursery, TX

Cercis canadensis (new cv. being patented from New York) - weeping redbud from Schmidt Nursery, OR.

Cercis canadensis 'Appalachian Red' - most striking color of all redbuds - iridescent hot-pink closest to red.

Magnolia ashei - Florida native with large foliage and flowers; supply never available (needed).

Magnolia tamaulipana - evergreen species native to Mexico; exceptional fragrance, heavy texture, and sculptural form.

Magnolia virginiana 'Santa Rosa' - (Woodlanders) need cultivar sweet bay magnolias available in quantity for mass trade.

Betula nigra 'Fox Valley' - Patented dwarf river birch from Chicagoland Grows Program of Chicago Botanic Garden; 10-15'.

Edgeworthia papyrifera - striking winter appearance with nodding silver buds; white and yellow flowers in spring.

Stachyurus - recent explosion in types in NCSU trials - long-flowered *S. praecox*, red-flowered *S. praecox*, *S. salicifolia* (narrow leaves), *S. yunnanensis* (evergreen), and 3 variegated types. Mid-spring chains of yellow; can get 15-20'.

Mahonias - enormous potential; new species and hybrids coming; slow propagation buildup at beginning. *M.* x 'Arthur Menzies', *M. lanceolatus* and *gracilis* from Mexico; *M. gracillipes* x *confusa* (*M.* x *savillii*) from England; plus others.

Illicium henryi - pink flowers; best of the Illiciums with good foliage, habit and showy flowers.

Daphniphyllum macropodum - excellent broadleaved evergreen tree; fast, tough; purple fruit; maroon flowers; 3 var. cvs.

Magnolia kobus 'Wada's Memory' - white flowers; exceptional tight symmetrical form; and the best magnolia foliage.

Heptacodium micinoides - tough to market with fall/winter interest; white fragrant flowers in Sept.; pink bracts; great bark.

Rhus chinensis 'September Beauty' - striking stress and pest free tree; white flowers in Sept.; great fall color.

Echinosophora koreensis - near extinct Korean endemic; first at NCSU; 3' suckering shrub with yellow spring flowers.

Sophora mollis - Himalayan species; bright chrome yellow flowers in early summer, shrub/tree?; '95 first flowering.

Clerodendron crytophyllum - Chinese species; 10 - 15' with giant queen anne's lace appearance in mid-summer.

Carpinus fangiiana - new Chinese species; largest leaf of any ironwood, 5-7" in length.

Rehderodendron macrocarpum - Styrax family with typical white flowers; but large red cone-like fruit in fall.

Manglietia yunnanensis - magnolia relative with first flowering '95; great potential; good form; striking white & red flowers.

Prunus mume - 20 years of JCR promotion (20 more to go before it's grown? Please); winter fragrant flowers.

Pseudolarix amabilis, *Cotinus coggygria* 'Purple Supreme', *Stewartia koreana*, and *Amsonia hubrechtii* in fall landscape.

In selecting plants for use, a diverse range of types is important for long-range safety. Use old standards plus some new. Look to new releases and try some. If markets don't buy; growers stop producing. Standard mass-produced plants are important; they are known and used. But avoid overuse. Strive for adaptability, diversity and year-round interest.

Previous two articles excerpted from *VNA Newsletter*, July/August 1995.

MARKETING PERENNIALS IN THE GARDEN CENTER

**David Culp, Sunny border Nurseries,
Kensington, Connecticut**

You don't need me to tell you or your customers that perennials are HOT! They are receiving pounds of mailers and magazines at their door or picking them up in the supermarket lines. It is no longer a matter of catching the perennial wave, it is riding it. The demand is now!

Waterloo's perennial department approaches one million dollars in sales. It had the highest percentage of increase in all green good departments the past five years. The Devon location, which does two-thirds of Waterloo's perennial business, doubled its volume in the past four years. I know this is happening elsewhere. Accounts that I call on tell me annual plant sales are flat and perennial sales are approaching their volume. We have a mega opportunity in front of us.

Gardening is the nation's number one past-time, yet the percent of dollars spent on plants is less than half what it is in Europe. People are cocooning. Restaurant sales are down nationwide, people are eating at home. The tourist industry is down, signs all over point to money being spent on the home. And it is not a matter of besting the competition, it's a matter of getting the consumer to spend that dollar on a perennial instead of a fishing rod or golf clubs.

My marketing program is a three prong approach: 1. New introductions - Keep the market stimulated. Look what happened to juniper and marigolds. 2. Customer frequency - Your best customers are your least customers. Give them a reason to come back often. 3. Creating your market as well as responding to the market.

First, manage your inventory accurately. Use the computer to record purchasing behavior and provide information for buying decisions.

The Master is a list of all perennials by SKU (stock keeping unit). A five-digit SKU number indicates it was purchased from another source. It also contains the cost, cultural requirements and from whom the item was purchased and the date the item was purchased.

The Class Report is a large break out of where business is happening. The list contains one hundred (100) sub-classes and it is very easy to see at a glance what is selling. It is roughly broken down by genus, color or cultural requirements, i.e., sun/shade, moist/dry site. It also aids in identification of trends quickly.

The Eighty-Twenty Report gives us the top twenty percent of SKU's by dollars sold. This report proves the old maxim that twenty percent of your inventory gives you eighty percent of your business. Proper use of this report helps you to keep track of your "bread and butter" items.

Current Inventory on Hand Report aids in making buying decisions in the spring and summer. You can decide how much to purchase before a crop is ready or how much more to purchase if an item is selling rapidly or is sold out.

The Popular Item Report is a weekly report of top selling items by location. You can balance your inventories or make decisions on re-orders.

The Five Sub-Class Report is a series of graphs based on three (3) years sales. This report is an extremely important tool in buying. Remember, you can't sell it if you don't have it on the floor. Keep current trends in mind, when reordering. Factor the recent percent of increase or decrease into your buying decisions. This report also

helps to plan promotions. I offer major items when they are in bloom at 10-20% off. Customers will come to purchase a popular plant at a reduced price and fill their carts with regular priced merchandise. (Turkeys-on-sale-at-Thanksgiving-time promotion adapted to perennials.)

If you do not have a sophisticated computer system, I strongly suggest the use of a written rolling calendar. Don't trust your memory. Write down sales numbers by day, week and month with a diary of what worked and what could be improved upon. The Weekly Sales Monitor is another way to chart your business and also help you and your team set and meet goals.

Major purchasing should begin for the next year late June through July. If you wait too long, the good items are gone. "Fill ins" and new introductions are added throughout the summer, fall and winter. The team approach to purchasing allows more feed-back while recent memory is fresh. The team signs on to items purchased and learns how the buyer made his decisions, helping ensure the success of each item. Use a purchase order form for record keeping and to provide the first information about a plant to the computer. Establish profit margins right away by pricing from the purchase order.

The purchase order is also useful when making tags and labels. Include genus, species, cultural name, height, sun requirements, water requirements, bloom time, bloom color and suggested usages on the tag or label. Include the retail stock number and bar code on all tags. Add the company name to tags and labels to keep that name in front of the consumer.

The most important thing I can say concerning signage is that everything must be signed and that signage should be consistent. Anything

from hand written to sophisticated computer generated or etched stone is OK. Just sign it!

Many nurseries print color pictures of the plants in bloom on their signs. We all know that color sells. The picture is a great aid in selling plants that are out of bloom and helps the consumer make decisions about plants with which he or she is unfamiliar. Waterloo Gardens purchases pictures of the plants and inserts them into the sign holders. Their sign holders are tracks that hold the signs in place but allow the signs to be easily moved. The sign holders also do double duty as overhead irrigation holders.

The winter is a great time to work on signage. Classification signage of top selling classes aids the consumer in locating items that are in high demand. Special new introduction signage is used to highlight items and re-emphasize commitment to new introductions and varieties. Special-use signage highlights plants by use and cultural requirements. Don't make the mistake of assuming the customer knows what he is looking at. Special use signs can be an important educational tool! An example of a combination of special signage and new introductions is the "specialty plant table" at Hick's or the Connoisseur table at Waterloo. Plant collectors and "hort heads" will flock to this table. It reemphasizes your commitment to new introductions.

Use display pots, display gardens or containerized plants to enhance alphabetical bench displays (display by nomenclature). Create displays that are visually attractive and sell combinations of plants. By creating displays, you are doing design work for your customer. It is a great service for them, as well as your business, and be sure to sign your displays. Do not assume the consumer knows plants or design. The sign will help him decide if it fits his needs. In summer months, when the stock levels are low, condense tables and put

displays at their ends. Displays of garden color, specific bloom time, or cultural usage lend themselves easily to endcaps. Be creative with your displays. Keep one step ahead of what the average customer would think of. During peak traffic periods, the staff at Waterloo Gardens often has to change and re-do the beds three to four times a day. During summer months, lower table heights. This allows for the customer to move easily and see all of the tops of the blooms. Mid-summer to fall is the time to break the orderly nomenclature rule. Use blocks of color from plants in full bloom in the front and on opening tables. At this time, gardeners are searching for instant gardening gratification. Color massing helps visually stimulate the customer from the beginning. Merchandise in these areas should be kept fresh and turned as rapidly as possible.

In-ground display gardens, sell not only the plants but the perennial garden concept. They are the "sizzle" that sells the plants. Often the customer will duplicate or modify an entire garden scene. I encourage the use of display in every square inch of space available. Use the front of the store, parking lot borders and rock walls. Be imaginative with your use of perennials. Remember to sign your plants in public areas. It will save you steps walking outside to look at the plant and save the plant's flowers from people cutting for identification.

The front entrance of the garden center sets the mood for the entire shopping experience. Keep the displays fresh and full of perennials in bloom. Color sells. Perennials in color at the front entrance and by the cashier and check-outs increase the possibility of impulse shopping.

Schedule advertising and promotions in February. Chart your business for the coming season. You control your business, it does not control you. Use the team approach. The year's guidelines are not iron-clad, but are planning

techniques. You must be able to respond to the weather conditions and consumer buying patterns. Use sales graphs for planning. For example, a perennial week at Waterloo was scheduled for the first week that records showed a significant drop in business. The event increased sales and stimulated business for several weeks. This industry must work on the down sides of our selling curve to extend our selling season. Growers give us plants that bloom early and late in the season. Merchants can utilize perennials that bloom between these seasons. Color sells!

Use sales graphs to make a marketing plan and decide when to advertise. Use the full selling price before peak selling periods in newsletters, informative signs, lectures and bag stuffers. At peak selling periods, offer a moderate reduction. At the first week after the significant drop, offer a greater discount. Later in the season, when sales are flat, an even greater discount may be offered. Before peak advertising, offer moderate discounts on pre-bloom or dormant pots. The idea is to time your advertising to take a moderate percent of discount reduction and sell out before the end of the season. Avoid deep discounts late in the season and large amounts of inventory to over winter. Overwintering inventory ties up capital and increases the chance of winter losses. With the chance of winter loss, cost of product labor to maintain, rent, taxes, labor to cut back and divide, overwintering materials is of questionable profitability.

Create an air of excitement with sale signage and display. Use a different and consistent color for sale signs. Place a copy of the week's promotions at the front of the store or in the front of the department. This lets the consumer know the value savings as well as making them aware that something noteworthy is going on in the department. Set up displays of promoted

items at least one week prior to advertising to maximize your advertising campaign.

Set up your sales floor as soon as weather permits to maximize the front end of the sales curve. Rock gardening plants (alpine rock garden plants usually bloom early in the season) and evergreen and semi-evergreen plants (for example, *Hellebores*) are good for early sales.

Use smaller pot sizes early in the season. They can be placed on the window sills until ready to be planted outside. The plant has the opportunity for a full season's growth but the cost is much less. In early season, 3 and 4 inch pots might account for 15-20% of your floor space moving into larger sizes as the season progresses. Two gallon containers are used mid to late season accounting for 20-30% of floor space. Quick product turns are essential for profitability. Think in terms of production per square foot. Five pint or one gallon pots turn most quickly.. They should occupy the bulk of the floor space. But always carry a variety of pot sizes, something to suit most every customer's situation.

Use an in-house newsletter to target your best customers. Include articles that reflect current gardening trends as well as report events taking place at the garden center. Do not include sales ads. Leave these to magazines, newspapers and newspaper insert stabs.

Try a promotion like "Dave's top twenty", a selection of twenty garden worthy plants each year. Sell these items at regular prices. Use new introductions or plants of note.

This year Waterloo became a key stocker of Blooms of Bressingham's Perennials. This is one of the first of this type of program in the United States. With Bloom's fine reputation for plant selections and Waterloo's current commitment to new introductions, the match

seemed well made. Waterloo advertised this new overseas market in their newsletter, magazine, posters, radio and on their television ads. It gives an international flavor to the marketing of perennials and provides plants that are scarce or unavailable in the United States.

The “Borders To Go” program is a series of pre-drawn perennial borders. These designs are based on sunlight requirements or season of bloom. Substitutions are offered for each item. This allows customers to select their own plants with little assistance. They can vary their choices and install a border at their own paces. Selection for the plants in the border are based on aesthetics as well as inventory. Information handouts or care sheets are made available in their appropriate merchandise areas. Winter is a good time for creating these sheets for the perennial department.

Don’t forget to educate employees about perennials. Show cashiers the perennial plants listed in each week’s ads. They became somewhat familiar with the items and can answer some fundamental questions. This is important because the cashier is the last personnel contact the customer has with the store.

Consider a Perennial-of-the-Year-T-Shirt Program. Feature a color drawing of the Perennial Plant Association’s Perennial of the Year on the front of the T-shirt. Sell the shirt and then offer a 10% discount if your customer wears the shirt into the store during the month of June, July and August. This not only promotes the perennial of the year, but advertises the store and promotes sales during the “slower months.” It also gives your customers another reason to come back.

Offer different lectures and during a promotional perennial week. Time this event for the predicted drop-off of perennial sales.

Offer daily and weekly specials. Use banners, color newspaper ads, bookmaker tabs, magazines in-house advertising and personal invitation to make the public aware of the event. Waterloo Gardens charges a modest admission fee for lectures. This gives them a perceived value. Attendees receive a coupon (with an end date) for a discount on specific related merchandise. This encourages sales and provides a reason to return.

Shopping by appointment is a way to provide individual attention and facilitate better staffing and sales floor coverage. The average sale by appointment at Waterloo Gardens is three hundred dollars. The customer comes with needs in mind, receives special attention and makes efficient use of their limited shopping time.

Encourage each employee to keep a “want book” or “special request” book. Forward a copy to the buyer each week so they can respond. This is also helpful in identifying trends.

Try to get away from the garden center for awhile and listen to what the public is hearing. Join plant societies, go to arboretums and their lectures. Consider going back to school to “freshen-up” and hear what’s being taught today. You can best meet the needs of your customers when you understand and empathize with those needs. There is a bright and glowing future for garden centers if we provide a timely response to our market.

Adapted from VNA Newsletter, March/April 1996. Originally printed in Perennial Plant Association Symposium Proceedings, Perennial Plant Association, Dr. Steven Still, editor.

PESTICIDE NEWS

Insecticides:

PROVADO (imidacloprid) - Bayer - Added to their label the usage on Christmas trees to control aphids, adelgids and sawflies.

FIREBAN (tefluthrin) - Uniroyal - Label changes include changing the signal word from warning to caution. Also added for soil incorporated into potting media used in containerized planting of ornamental trees, shrubs, plants, flowers, conifers, Christmas trees, non bearing fruit and not trees, and bushes.

Fungicides:

STRIKE 25 (triadimefon) - Olympic - Added to their label the usage on hydrangea and poinsettia.

BANNER MAXX - Ciba Turf & Ornamental Products - A systemic fungicide designed to control powdery mildew, rust, scab and leaf spot on ornamentals and other plants. Banner MAXX is a microemulsion concentrate that is a clear liquid, that mixes completely with water. Available in quarts, 1-gallon containers and 15-gallon returnable and refillable turfPak containers. For more information call: (910)632-6000.

DACONIL WEATHER STIK - ISK Biosciences Corp. - Designed to control 55 diseases on broadleaf shrubs and trees, foliage plants, flowering plants, bulbs and conifers. Protects turf and ornamental foliage on contact. This product is available in 2 ½ gal. plastic containers. For more information call (770)578-9990.

SUBDUE - Ciba is voluntarily canceling all registrations of metalxyl (Subdue) as of December 31, 1998. However, Ciba is refining and renaming the chemical to produce a better product. Keep your eye out for this change to mefenoxam.

Herbicides:

BARRICADE (prodiamine) - Sandoz - Added to their label the control of crowfootgrass, Florida pusley, itchgrass, jungle rice, kochia, lovegrass, chickweed, panicum, Persian speedwell, sprangletop, witchgrass and woolly cupgrass on turf. And as a result of IR-4 Project, they will support registration on 26 additional ornamental species.

ENVOY (clethodim) - Valent - A new formulation being marketed to control grasses in ornamentals.

Miscellaneous:

BONZI (paclobutrazol) - Uniroyal - Added to their label for the growth regulation the usage on dahlias. Also prohibited the re-use of pots, trays, etc. previously used in production that were treated with the product.

NEMASLG (*Phasmarhabditis hemaphrodeta*) AGC - This English Company has introduced this biopesticide for slug and snail control. Currently it is being used in the homeowner market in England.

CRUISER (*Heterorhabditis baeteriophora*) Ecogen - A new nematode formulation used to control various insects in turf ornamentals, citrus and cranberries.

Myrothecium verrucaria - Abbott Labs - EPA established an exemption from residue tolerance requirements on food and ornamental crops

when applied preplant, preceding or post planting. This is a naturally occurring fungus isolated from a nematode cadaver and is being developed as a nematicide.

Pesticide Disposal Sites: Delaware residents may use these sites for disposal of unwanted pesticides 8:30 am to 3:00 pm during the weeks indicated:

New Castle County- 1st Saturday of each month, Delaware Reclamation Plant, 1101 Lambson Lane, New Castle - 2nd Saturday of each month, Pine Tree Corners Transfer Station, Rd. 25, Townsend.

Kent County - 3rd Saturday of each month, Cheswold Collection Station, Rd. 153 Cheswold.

Sussex County - 4th Saturday of each month, Southern Solid Waste Management Center, Route 20, Jones Crossroads.

Restricted Entry Intervals

The EPA has released a list of 95 products that have been allowed a 4-hour restricted entry interval (REI) under the WPS on the basis of the low risk they represent to agricultural workers. If you want a copy of the list or want to check if a particular pesticide is on the list, give me a call (302-831-2531).

RESEARCH BRIEFS

Strategies for Decreasing Environmental Impact

The following workshop was presented at the 1995 ASHS meeting in Montreal, Canada.

BMP Handbook (Tom Yeager):

In an effort to preempt unwanted regulation, the nursery industry asked a team of researchers and extension personnel to develop a best management practices (BMP) handbook. The guidelines for development were:

- voluntary use,
- uniform application across the southeast,
- recommendation comply with federal and state guidelines,
- allow nurseries to compete and
- nursery input provided.

The BMP handbook deals with fertilization and irrigation. It is distributed through the SNA, 1000 Johnson Ferry Road, Suite E-130, Marietta, GA 30068-2100.

Low Maintenance Cover Crops (Larry Kuhns):

A totally clean field with tilling and herbicides will yield maximum crop growth but implementation of this strategy is based on a short term view of nursery production. A cover crop helps to maintain and generate organic matter, reduce soil erosion, improve soil structure and operate equipment. Research into species and varieties, establishment methods, competition and methods of killing cover crops has produced the following results.

Species and varieties: Legumes add N to the system and have a deep root system. Subclovers were not hardy enough.

Bird's foot trefoil and red clover were too aggressive. White clover was the most acceptable but it attracts deer, is slippery when wet and only lasts about 2-3 years. These negative outweighed the positive role of N-fixation.

Grasses were also studied. Canada bluegrass and red top were not dense enough. Turf-type perennial ryegrass and tall fescue were better than the older varieties. Tall fescue supports traffic better than the other grasses. But, fine fescues proved to provide the best cover. Hard fescue had less matting than chewing fescue and was denser than sheep fescue, therefore it is the best choice for a nursery cover crop.

Establishment methods: To establish a cover crop in a nursery, kill all the existing vegetation first. Loosen the soil and seed with a spin broadcast or drop spreader. Roll the seed to improve seed/soil contact. A brilliant seeder is the Cadillac alternative.

Early spring or early fall seeding is best for the grass but not necessarily best for the crop. When you seed grass in August, you get an excellent stand by spring but the grass is so well-established that the furrow won't close around liners when you plant them. Seed in late September so grass is only moderately established and furrow closes. Fertilize with 40 lbs N/A at seeding and again when the grass is up one inch. Mow twice a year and use herbicides to control unwanted broadleaf weeds.

Competition Study: You must have a vegetation free strip around the nursery row. Poast Fusilade and Acclaim do not kill hard

fescue. They can be used to take out other grasses. Kerb, applied in the fall, is best for control of hard fescue. Round up kills tall fescue and perennial rye but just stunts fine fescues. New research has indicated that Surflan stunts roots. This might be a good way to reduce the competitiveness of the nursery cover without reducing its ground-covering effectiveness.

Looking at another pest problem, voles prefer hard fescue to woody plants, so the hard fescue cover might "protect" ornamentals from vole damage.

Alternative Irrigation Practices (Bert Swanson):

Container nurseries use on average, 4-5 million gallons per acre for a six month period. A one-gallon container need 17 gallons of water per year. Subirrigation looked good at first, but there was poor plant survival after two years. The response to different types of irrigation was species specific, so it may be possible to group plants in a nursery based on preferred irrigation method. Capillary mat irrigation offered the best combination of ease, good results and minimum N loss.

Irrigation/Fertigation Interactions (Alex Niemiera):

Nutrient leaching is dependent on the irrigation volume and method; the fertilizer type, amount and frequency; and the substrate type and water content. Available N can vary dramatically based on the amount of water applied. The best irrigation method to decrease N leachate is cyclic irrigation.

Suburban street-tree evaluations. A survey of individuals and neighborhoods about their street trees yielded the following results. Residents expressed that the most important benefits were that all their trees were visually pleasing and enhanced the look and value of their yards and houses. They rated the following benefits as low in importance: reduced noise, slowed wind speed and cooled homes in summer. The most significant annoyances were falling leaves in autumn, other falling debris, suckers, insect problems and diseases. Overall, residents were satisfied with tree forms (lower rating for Ky coffee tree and common hackberry) but were less satisfied with the trees' size and growth rate. Residents in the neighborhood survey were able to accurately perceive species diversity and size diversity. They showed a moderate preference for species diversity. They seemed to prefer the size diversity already occurring in their own neighborhoods. H. W. Schroeder and S.R. Ruffolo.

Previous article excerpted from *J. of Arboriculture*, January 1996.

Hardy crapemyrtles. In zone 6, crapemyrtle usually dies back to the ground each year due to winter injury. This results in higher maintenance costs since the dead branches must be pruned out. An evaluation project of the hybrid cultivars of *Lagerstroemia indica* x *Lagerstroemia fauriei* was conducted to determine which were the hardiest cultivars. The hybrid cultivars 'Acomo' and 'Hopi' and the *L. indica* selection 'Regal Red' all performed well with little or no damage. All of the other cultivars had significant winter injury, however none of them completely dies back to ground level. By using the hardier cultivars, one can reduce maintenance costs of pruning out winter damaged branches at least following mild winters. E. Davis.

David Elm (*Ulmus davidiana*) - a promising new tree for urban landscapes. David elm is one of more than 20 species of elms native to China, all of which show a good degree of resistance to Dutch elm disease. David elm tolerates a wide range of soil moisture conditions, including springtime wetness often found in clay soils. It attains a height of 50 feet and resembles the American elm in its vase-shaped branching pattern. Deep-green, glossy leaves resemble those of American elm but are obovate in shape, a character that is useful for identification. David elm is not currently available in the nursery trade but shows promise for urban settings. It appears to allocate much of its early growth to its root system, thus, significant top growth may not begin until the root system is well-established. This favorable root to crown ratio may be a factor in producing "toughness" or urban stress tolerance.

Previous articles excerpted from *Landscape Plant News*, Vol. 7, no.1, Winter 1996.

Fertilization of tidal marshes. This study concluded that marsh fertilization should be reserved for subsurface application in the establishment of new marshes. Surface application of fertilizer may in some cases be ineffective in that tidal action may remove the nutrients before they are taken up by the plants. This in turn may contribute to the already high levels of nutrients in Chesapeake Bay waters, exacerbating existing water quality problems. So, confine the use of fertilizer on wetlands to wetland creation and restoration projects and use slow-release fertilizer applied in a subsurface manner. W. Roberts.

Previous article excerpted from *The Virginia Wetland Report*, Winter 1996, Vol 11, No.1.

Ornamental Grasses for Cold Climates. This 28-page bulletin is available through the Minnesota Extension Service and can be ordered by calling 1-800-876-8636 and asking for item BU-6411-NR. The cost is \$6 per copy plus shipping. The bulletin is available to disabled persons in alternate formats upon request.

A Grower's Guide to Water, Media, and Nutrition for Greenhouse Crops. Edited by David Wm. Reed. This 32-page book consolidates information about the interrelationship of water, media, and nutrition and shows how they relate to plant growth and health in one important reference. Puts everything professional growers need at their fingertips. This 7" x 9" soft cover book contains 111 tables, charts/graphs and photographs. Cost is \$55. Item #B029, ISBN 1-883052-12-2, 1996. For more information call (U.S. only) 1-800-456-5380, or FAX: 1-800-456-0132, (outside U.S.) 1-708-208-9089, FAX: 1-708-208-9350. E-mail: Growertalk@aol.com or gtalks@xnet.com. Internet: <http://www.growertalks.com>

Ball Perennial Manual: Propagation and Production by Jim Nau. This is the first book on both the propagation and production of a wide variety of herbaceous perennial plants. Information is provided on producing a crop from start to finish, regardless of whether starting from seed, plugs, bare-root transplants, or cuttings. This 512-page hard bound book is priced at \$65. Contains 16-page color section (70 color photos), item #B027, ISBN 1-883052-10-6. For more information call (U.S. only) 1-800-456-5380, or FAX: 1-800-456-0132, (outside U.S.) 1-708-208-9089, FAX: 1-708-208-9350. E-mail: Growertalk@aol.com or gtalks@xnet.com. Internet: <http://www.growertalks.com>

June 15-August 15 - Landscape Architecture Courses for Professionals (one-to five-day), Harvard University Graduate School of Design, Harvard University, Cambridge, MA. Contact: Office of Development and External Relations, Harvard University, 48 Quincy Street, Cambridge, MA 02138; tel:(617)495-1680, fax:617-495-5967.

June 17-22 - Paved to Protected: Restoration in the Urban/Rural Context, 1996 International Conference, Rutgers University, New Brunswick, NJ. Contact: Society for Ecological Restoration, 1207 Seminole Highway, Suite B, Madison, WI 53711, fax:608-265-8557.

June 18 - SE PA Regional Christmas Tree Growers Summer Meeting, 12:30-4:30 pm, Varner's Tree Farm, 746 S. Trappe Road (Route 113), Collegetown, PA. Topics to include: insects, soils, weed control, and more. 1 core and 3 category pesticide update credits (PA) will be offered. For more information contact: Montgomery Co. Coop. Ext., Christmas Tree Meeting, 1015 Bridge Rd., Suite H, Collegetown, PA 19426

June 20-30 - The NCSU Arboretum 1996 Garden Tour, Italy, Switzerland, Austria, Southern Germany; Contact: J.C. Raulston, (919)266-3322.

June 22-24 - Onsite/Insight: Humanity, Nature, and Time - Symposium on Landscape History, State College, PA: Contact: (814)863-1738, (e-mail: rmh9@ede.psu.edu)

June 24 - E.C. Geiger 1996 Field Days, Harleysville, PA, call:(215)256-6511.

June 26 - Adkins Arboretum, Hillsboro, MD. Arborist Skills Workshop. For more information contact Marc Teffeu, Wye Research & Education Center, (410)827-8056.

June 27, 28, 29 - Symposium on Landscape Plants: Exploration Breeding Evaluation, sponsored by the Landscape Plant Development Center. Radisson Hotel South Bloomington, MN. For more information contact LPDC, 3675 Arboretum Dr., Chanhassen, MN. 55317. fax:(612)443-2521.

June 29 - July 2 - American Association of Nurserymen, GCA Retail Specialty Tour, San Francisco, CA. Contact: AAN(202)789-2900.

July 9, 11 - Annuals, Bulbs and Grasses for the Landscape. Ornamentals Short Course Series, Research and Education Center, Georgetown, DE, 6-8 pm, Contact Dot Milsom (302)831-2531.

July 10-12 - Summer Mants, Baltimore Convention Center, MD. Contact: Carville Akehurst, Tel:(410)256-6474.

July 13-17 - Ohio International Floral Short Course. Cincinnati Convention Center, Cincinnati, Ohio. Contact: Ohio Florists' Assn., 2130 Stella Court, Suite 200, Columbus, Ohio, 43215-1033, Tel:(614)487-1117.

July 16-18 - Wetland Plant Identification, W & M Virginia Institute of Marine Science, Gloucester Point VA; Contact: (804)642-7395.

July 22-26 - Environmental Concern Inc., 1996 Professional Courses: Wetland Evaluation, Mitigation, Planting Techniques, and Constructed Wetland Site Visits - Field Wetland Botany. Location: St. Michaels, MD, 8 am - 5 pm. \$600.00/10 credits. For more information please call (410)745-9620; fax:410-745-3517.

July 23, 25 - Perennials for the Landscape. Ornamentals Short Course Series, Fischer Greenhouse, Newark, DE, 6-8 pm, Contact Dot Milsom (302)831-2531.

July 23, 24, 25, & 30 - Summer 1996 Greenhouse Management Course, sponsored by Wicomico Cooperation Extension. This is a 6-part course for greenhouse growers. A manual will be provided for each person who signs up for the complete 6-part course. Registration fee:\$95. Deadline: July 12 - registration begins at 8:30am/conference at 9am. Location:Wicomico County Cooperative Extension Office. For more information call: Ginny Rosenkranz (410)749-9413.

July 24-27 - Native Plants in the Landscape. Western Carolina University, Cullowhee, NC. Contact: Sue Dietz, (704)227-7397.

July 28-August 3 - Perennial Plant Association Symposium, Denver Maraud Tech Center, Denver, CO., Contact Dr. Stephen Still: (614)771-8431.

July 29-31 - East-Penn Allied Nursery Trade Show. Tel:(717)238-1673.

July 30-August 2 - Virginia Recycling Association Annual Conference & Trade Show, Roanoke, VA; Contact: (703)549-9263.

August 2-3 - ALCA Masters in Management for the Landscape Industry, Chicago, IL; Contact: (703)620-6363.

August 6 - IPM Workshop, Ornamentals Short Course Series. Winterthur. Contact Dot Milsom (302)831-2531.

August 8 - CMREC Site Tour, 2-4 pm - Cost: free. Location Central Maryland Research & Education Center, 11975 Homewood Road, Ellicott City, MD 21042, call:(301)596-9413.

August 9 - August Cut Flower Conference, Prince George's Community College, Largo, Maryland. Registration deadline: August 2, cost \$20 (Lunch on your own)- \$25.00 after August 2. For more information contact: University of Maryland, Attn: August Cut Flower Conference, 11975 Homewood Rd., Ellicott City, MD 21042.

August 9-11 - SNA Trade Show & Convention, Contact: Danny Summers, (770)973-9026, fax:(770)973-9097.

August 10 - A tour of Cramer's Posie Patch in Elizabethtown, PA will be conducted by the Association of Specialty Cut Flower Growers (ASCFG). Contact ASCFG (216)774-2887 for registration information.

August 13, 15, 19 - Diagnosis & Control of Diseases of Woody Ornamental Plants. Ornamentals Short Course Series, Fischer Greenhouse, Newark, DE, 6-8 pm, Contact Dot Milsom (302)831-2531.

August 17-18 - North Carolina Association of Nurserymen's Asheville Trade Show, Asheville, NC; Contact: (919)266-3322.

August 20-24 - AAN Convention and Trade Show, Portland, OR. Contact AAN (202)78-2900.

August 21 - Summer Turf and Landscape Expo, Apgar Turf Farm, Smyrna, DE. Contact Marianne McGloin (302)677-1895.

September 5 - Ornamentals Research Expo, University of Delaware Botanic Garden, Newark, DE. Contact John Frett, (301)831-2531.

September 5-8 - AAN Management Development forum, Walt Disney world, FL; Contact: AAN:(202)789-2900.

September 6-9 - ALCA Interior Plantscape Conference & Trade Show, Opryland Hotel, Nashville, TN; Contact: (703)620-6363.

September 9-11 - Environmental Concern Inc., 1996 Professional Courses: Wetland Evaluation, Mitigation, Planting Techniques, and Constructed Wetland Site Visits - Used for Constructed Wetlands. Location: St. Michaels, MD, 8 am - 5 pm. \$350.00/6 credits. For more information please call (410)745-9620; fax:410-745-3517.

September 16-20 - Environmental Concern Inc., 1996 Professional Courses: Wetland Evaluation, Mitigation, Planting Techniques, and Constructed Wetland Site Visits - Advanced Wetland Delineation. Location: St. Michaels, MD, 8 am - 5 pm. \$775.00/10 credits. For more information please call (410)745-9620; fax:410-745-3517.

September 20-21 - Mid-Atlantic Regional Meeting of the American Asso., of Botanic Gardens and Arboreta: Securing Our Future. Location: U.S. National Arboretum, 3501 New York Avenue, N.E., Washington, DC 20002. Contact: Carole Bordelon or Susan E. Bentz, Tel:(202)245-2726.

September 28-October 6 - PPGA's 29th Annual International Bedding Plant Conference and Trade Show, Hyatt Regency, Dearborn, MI; Contact: (313)593-1234; fax:313-593-4149.

October 6-10 - 93rd American Society for Horticultural Science Annual Meeting. Lexington Convention Center, Lexington, KY. Contact: Andrienne R. Haubert, (703)836-4606, fax:703-836-2024, e-mail: ash@ashs.org.

October 13-15 - Eastern Region International Plant Propagators' Society. Cincinnati, Ohio. Contact: Margot Bridgen, 26 Woodland Rd., Storrs, CT 06268.

October 15, 17, 24 - Weed Control in Turf, Ornamentals Short Course Series, 103 Worrlow Hall, Newark, DE, 3-5 pm. Contact Dot Milsom (302)831-2531.

October 22 - Getting to the Roots of the Problem - Use of Beneficial Mycorrhizal Fungi in Landscape Restoration, First Annual Janet Meakin Poor Research Symposium (date changed from April 26, 1996), Glencoe, IL. Contact: Sue Brogdon, Chicago Botanic Garden, 1000 Lake-Cook Road, P.O. Box 400, Glencoe, IL 60022; Tel:(847-8261.

October 29 - Core Exam - 9:00 am - 12:00 pm lunch on your own, Specialty Exams-1:00 pm -4:00 pm - Location: State Dept. of Agriculture, Conference Center, 2320 South DuPont Hwy. Dover, DE 19901. Additional applications available from Marianne McGloin, 952 Monroe Terrace, Dover, DE 19904, Tel:(302)677-1895.

October 29, November 5, 12, 19, 26, December 3 - Drafting Techniques for the Landscape Designer, Ornamentals Short Course Series, 103 Worrlow Hall, Newark, DE, 6:30 - 8:30 pm. Contact Dot Milsom (302)831-2531.

November 6-8 - International Plant Propagators Society, Charleston, SC.

November 12-16 - PGMS 84th Annual Conference, Fort Worth, TX: Contact: (410)584-9754.

November 17-21 - ALCA Landscape & Grounds Maintenance Conference, Cincinnati Convention Center, OH; Contact: (703)620-6363.

November 18-22 - Environmental Concern Inc., 1996 Professional Courses: Wetland Evaluation, Mitigation, Planting Techniques, and Constructed Wetland Site Visits - **Winter Wetland Delineation**. Location: St. Michaels, MD, 8 am - 5 pm. \$775.00/10 credits. For more information please call (410)745-9620; Fax:410-745-3517.

November 20 - Delaware Turfgrass Conference, Hockessin Memorial Hall, Hockessin, DE. Contact Marianne McGloin, (302)677-1895.

December 3 - DE/MD Ornamentals and Turf Workshop. Sheraton Inn, Dover, DE. Contact Bob Mulrooney,

January 4-6, 1997 - Winter Mants, Baltimore Convention Center, MD; Contact: Carville Akehurst, 410-256-1799, Fax:410-256-2208.

January 9-12 - NCAN "Green & Growing" Show, Winston-Salem, NC; Contact: Bill Wilder, (919)266-3322.

January 15, 16 - Delaware Horticulture Industry Expo. Sheraton Inn, Dover, DE. Contact Marianne McGloin, (302)677-1895.

