

ASSOCIATION NEWS
Linda Pevey
Executive Director, D.A.N.

The second annual D.A.N. Auction was held June 19 in Lewes in conjunction with the Lewes Zwanandael Heritage Tour. Thanks to the generous donations of our members, a profit of \$2600 was made. This money has been placed in the Research and Education Fund, which now has a balance of \$4300. Thanks to all who donated their time and plant materials to make this a successful event.

The Summer Turf and Nursery Expo was held August 12 at Joseph Wick Nurseries. We had another good turn out for a great day of workshops, equipment demonstrations and nursery tours. Look for the Expo back at Apgar's Turf Farm next year. Thanks to everyone at Joseph Wick Nurseries, especially Carol and Joe, for being great hosts.

If you are a Delaware Certified Nursery Professional, you should have recently received a report indicating your recertification credit status. If you need credits, there are still several opportunities available before the end of the year, including the Delaware Turfgrass Conference and the MD/DE Turf and Ornamentals Workshop. See the Calendar in this issue for more listings.

The D.A.N. Cellular Telephone plan is now in place with Bell Atlantic Mobile. This plan offers substantial discounts to our members only, in Delaware and surrounding states. Contact Russ Smoot at 270-1430 or Cheryl Noti at 892-3222 to get new service or convert existing service to this pricing plan. Give Russ or Cheryl a call for more details.

The Delaware Turfgrass Conference, cosponsored with the University of Delaware is scheduled for October 20 at Hockessin

Memorial Hall. Registration information will be in the mail soon.

The Urban and Community Forestry Advisory Council (America the Beautiful) will be notifying grant recipients in the next couple of weeks. Grant recipients will be contacting nurseries and landscapers directly from the contractors list provided by the Department of Agriculture. If you are on the contractors list, you will be receiving a packet from the Department of Agriculture with planting specs, etc. If you are not on the contractors list and would like to be, contact me at 653-1021 or John Schwalm at the Department of Agriculture at 739-4811. You must have a valid Delaware Business License in order to be put on the list.

The 1994 Delaware Horticulture Industry Expo is scheduled for January 18 & 19 at the new Sheraton Inn Conference Center. Booth space is now for sale for the trade show and going fast. Contact me for further information if you are interested in exhibiting. We have a great program lined up. so be sure and put the date on your calendar.

Watch the mail for your invitation to the upcoming Fall Dinner Dance. If you haven't attended the last couple of years, come on out and join your fellow members for an enjoyable evening out.

U OF D NEWS
Susan Barton
Extension Specialist

On August 31st about 50 members of the nursery industry toured research projects and new additions to the Botanic Gardens at the University of Delaware. Tours were followed by a summer cookout and plant give-away. John Frett and I were pleased with the interest shown by the nursery industry and hope to make this an annual event.

Remember to register for the Ornamentals Short Course Program designed to meet the needs of nursery professionals. Two courses are left in the 1993 schedule: Disease Diagnosis and Control (September 9,14,16,21) and The Basics of Ecological Landscape Design (October 5,7,12,14). For more information about the short courses, call 831-2531.

Delaware Cooperative Extension, Penn State Extension, D.A.N. and P.N.A. sponsored their fourth annual Garden Center Bus Tour on July 20th. We visited three garden centers in the Northern Virginia area, outside of Washington, DC. Participants found the garden centers interesting and were especially impressed with the employee enthusiasm expressed at Merrifield Garden Center. They are definitely doing something right! If you didn't make this tour, we hope to see you next year.

The Delaware/Maryland Turf and Ornamentals Workshop is scheduled for December 15th at the Sheraton in Dover. Amy Brown from Maryland will talk about exposure of landscape personnel to pesticides. Chuck Cornell will cover disease and insect problems of landscape plants followed by a question and answer session. Break out sessions in the afternoon will cover turf varieties and biorational pest control concurrently with tree health care. Call me for more details.

YOU AND YOUR PEOPLE
Susan Barton
Extension Specialist

The following is the third in a four-part series of articles summarizing a workshop conducted by Clyde Vadner at the 1991 Delaware Horticulture Industry Expo.

Hiring Employees

If you want to hire good employees that will stay with you, take your time. The tone of the rest of the employment relationship is set by the interview experience. If you treat candidates professionally, they will perceive the job as a serious career-level position. If you act like you would hire anyone who walked in off the street, they will never invest themselves in the job.

Treat everyone you interview equally. This is not only a fair policy but a legally sound policy. Don't risk the legal ramifications of discriminatory hiring.

Interview each candidate at least twice. The immediate supervisor for the position should conduct at least part of the interview. Provide an environment in which the candidate can relax. Few people perform well under a lot of pressure. One-on-one interviews are best. Never have more than two people interview a candidate at one time.

The tools of the interview are the questions you ask. Use open-ended questions that include who, what, where, when and how. Closed-ended questions are likely to leave you with yes and no answers no better informed about a candidates qualifications than you were before the interview. Start with broad questions and gradually become more specific to the job in question. Use probing questions to find out details about how a candidate would respond on the job. Make your questions situation.

Call the references to verify information provided on the application and in the interview. Never hire a candidate on the spot. Call them later if you want to hire them and get a commitment. Schedule their training session and discuss employment details such as a uniform policy.

synergism of the team can be more effective than the sum of its parts.

Training Employees

People learn in small doses. So, train employees with a consistent program of regular, small pieces of information.

There are three parts to a training program: orientation, job skills, and growth. The orientation provides an opportunity to meet fellow employees and learn about the history and policies of the company. The orientation should be completed on or before the first day of work.

Job skills training is the responsibility of the immediate supervisor. The employee supervisor relationship is important for future motivation. Proper training by the supervisor helps to establish an employee-supervisor bond. Training can be accomplished on the job and/or in special training sessions.

In the growth phase of training, employees get better at what they already know how to do. Bring in sales training professionals and technical product experts and send employees to as many outside training programs as possible. If you invest in employees, they will invest themselves in you.

Remember that no one is perfect. Everyone needs to grow, improve, and change. This applies to all levels of employees in the organization. Self-development time is an important management component. If employees work and grow together, the

WATER LILY - ATTACK OF THE LEAF MINER

Raymond Bosmans and Stanton Gill
Maryland Cooperative Extension

Aquatic gardening has become increasingly popular in the last few years with homeowners and commercial landscapers. Pond building materials and plants are becoming widely available. An aquatic garden can be almost any size from a whiskey barrel to a large pond built with a flexible liner. Its tranquillity and the attractive flowering plants add to any landscape.

One of the favorite aquatic plants is the cultivated water lily. Water lilies whether hardy or tropical are easily grown provided they receive 6 hours of sunlight daily and are fertilized on a regular basis.

Another plus for aquatic plants is their tolerance of disease and insect problems. Diseases and insect problems of waterlilies in the landscape seldom warrant control. In reality there isn't much that can be done except to remove the affected foliage. However in large monoculture production areas insects and some diseases do reach epidemic proportions and require control measures. Here is an example of one such problem with a leafminer.

In May we received a call from an aquatic nursery that had an insect mining the foliage of two species of water lilies. The manager said they had seen leafmining damage in other seasons but in 1993 there was extremely heavy damage, making plants unsalable. The larvae was making serpentine mines in the foliage. A light infestation would probably go unnoticed by most aquatic gardeners. If three to four larvae mine a leaf, then the damage is very noticeable.

The larvae we extracted from the foliage was identified as a midge larvae in the genus *Chironomous*. The larvae are often referred to as bloodworms because of their coloration. They seem to occur everywhere in aquatic vegetation and on the bottom mud.

The adult midge, which looks similar to a mosquito, lays eggs on aquatic plants and the larvae, immediately after hatching, make their way into the plant tissue. They tunnel under the epidermis of the leaves of the lily causing the characteristic leafmining damage.

The nursery manager applied three applications of *Bacillus thuringiensis israelensis*, Bti, (VectoBac 12AS) at 10 day intervals. Treatments were made in May. In late June they reported that all of the new foliage was free of leafminer damage. It appears that Bti may be an effective biological larvicide. Technical representatives at Abbott lab mentioned that in their trials using Bti to control mosquito and black fly larvae it was noted that *Chironomous* larvae were also controlled. If other aquatic nurseries are having problems with this pest, we would be interested in working with you in investigating control of this pest.

Preceding article reprinted from Nurserymen's News, Vol. 55, No. 3, Summer 1993.

DROUGHT TOLERANCE OF SUGAR MAPLE CULTIVARS

**Dr. John C. Pair,
Kansas State University Horticulture
Research Center, Wichita, KS**

To evaluate the tolerance of various hard maple species and cultivars to Kansas conditions, 10 selections were planted in 1983 in an open area exposed to full sun and wind. Trees were mulched and irrigated as necessary for several years to prevent excessive drought stress. Growth differences over an 8-year period indicate greatest height and caliper in **Caddo** maples, a southern ecotype native to Oklahoma. Other cultivars growing well include **Bonfire**, **Fairview**, **Green Mountain**, and **Wright Brothers**.

In addition to growth measurements, attempts were made to separate drought stress, manifested by marginal leaf "scorch," from another symptom of injury now being defined as "tatter". Leaf tatter involves deterioration from various other causes, perhaps including other climatic stresses like wind. Observations over several years indicate very consistently that the most tatter resistant cultivars are **Caddo**, **Commemoration**, and **Legacy**.

During 1990 and 1991 no supplemental irrigation was applied to observe performance under drought stress. Xylem water potential was measured by means of a pressure bomb during mid-day on July 31 and pre-dawn on August 2, 1991 when trees were under considerable stress

Measurements were repeated September 4 after 7 inches of rain in late August. Significant differences occurred among cultivars in both predawn measurements; however, the greatest stress (lowest potential) occurred on all cultivars in early August, before the rains. The

most drought-tolerant were **Caddo** and **Legacy**, followed by **Commemoration** and **Endowment** on August 2. A similar trend, although under less drought stress, occurred on September 4 when measured at pre-dawn and trees were not undergoing high transpiration. **Caddo**, a southwestern ecotype, also indicated less drought stress mid-day when sampled on September 4.

*Editor's Note: Sugar maples are marginally hardy in Delaware due to hot, dry summer conditions. The ecotype **Caddo** offers us new possibilities.*

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WEED CONTROL IN HERBACEOUS PERENNIALS AND WILDFLOWERS

Jeffrey F. Derr,
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Hampton Roads Agricultural Experiment
Station, VA Beach

Through a grant from the Virginia Nurserymen's Association, I have been conducting weed control investigations in herbaceous perennials. I have been evaluating preemergence herbicides in container and field-grown shasta daisy, lanceleaf coreopsis, purple coneflower, ox-eye daisy, black-eyed Susan, and blanket flower. These species are also commonly referred to as wildflowers. My research in pots would, of course, simulate container production, while the work in the field probably relates best to landscape maintenance. I have been working strictly with transplanted wildflowers in containers and in the field. I do not expect that direct-seeded wildflowers will be able to tolerate most preemergence herbicides. However, once these species have emerged, or once they have been transplanted, these species should have greater tolerance to herbicides.

My field studies have focused on metolachlor (**Pennant**) since yellow nutsedge is a common weed problem throughout the state. At maximum use rates, I have observed slight temporary injury in these perennials, but they quickly outgrow the damage from metolachlor. I feel the granular form of **Pennant** is safer than the sprayable form since I have seen slight foliar burn soon after application of the sprayable formulation, probably due to the solvent in this emulsifiable concentrate. However, plants quickly outgrew the injury observed from either formulation, with no effect on stand or flower production.

Pennant controls annual grasses and yellow nutsedge, but is ineffective on many

broadleaf weeds. So my strategy has been to find a broadleaf partner to combine with **Pennant**. Two of the broadleaf herbicides I have tried, simazine (**Princep**) and isoxaben (**Gallery**) have caused unacceptable injury and stand reduction in some of these species. Lanceleaf coreopsis was the most tolerant species to these broadleaf herbicides, while ox-eye daisy was the most sensitive. In one study, **Gallery** at maximum use rates completely killed ox-eye daisy and reduced stands of blanket flower by about 50%. I evaluated **Derby 5G**, the prepackaged granular mix of **Pennant** plus **Princep**. In one study, **Derby** at 80 pounds product per acre reduced the stand of all the wild-flowers tested, with the injury attributed to the simazine component since **Pennant** alone did not reduce the stand.

I evaluated **Ronstar 2G** in combination with **Pennant 5G**. I applied the two granules separately to ensure even distribution. **Ronstar** caused only temporary damage and did not reduce stands of any wildflower. However, it is time-consuming to apply two granular products to an area. I did not evaluate **Ronstar** wettable powder since I would expect it to be much more injurious than the granular form. We tried combining **Pennant** with **Surflan** for broader spectrum weed control, but seem to have some tank-mix incompatibility with this combination.

In container studies, I observed injury and a reduction in growth of certain of these perennials with maximum use rates of granular **Snapshot** (200 pounds product per acre), **Surflan** (4 quarts per acre), and wettable powder **Devrinol** (8 pounds product per acre). These products need to be evaluated at lower rates to determine if crop tolerance can be improved. **Snapshot** and **Surflan** gave excellent control of prostrate spurge and oxalis while **Devrinol** did not give acceptable control of either weed. **Pendulum** (pendimethalin),

Barricade (prodiamine), and one experimental herbicide I am evaluating were the most promising products in my studies. These three herbicides gave excellent control of prostrate spurge and oxalis with little to no crop injury and no reductions in crop growth. **Pennant**, **Ronstar 2G**, and **Dacthal** also caused little or no injury but were not as effective as **Pendulum** or **Barricade** in controlling one or both of these two weed species.

Further research is needed to improve broadleaf weed control in container and field-grown wildflowers. The products with the greatest potential, pendimethalin (available as **Pendulum** and **Southern Weedgrass** control, among other formulations), metolachlor (**Pennant**), and prodiamine (**Barricade**), control annual grasses and small-seeded broadleaf weeds, but are ineffective against other broadleaf weeds such as common ragweed, morning-glory, and groundsel. Hopefully the species I evaluated and other herbaceous perennials will be added to the respective herbicide labels by the manufacturers.

Preceding article reprinted from VNA Newsletter, May/June 1993.

NOBODY ASKED ME, BUT...

Doug Torn

Quality, Service, Selection, and Price (QSSP); what we all want, right? We hope this is exactly what you get when you order from Buds & Blooms. But I'm not going to talk about QSSP and how it relates to Buds & Blooms, but rather how it relates to quality plants like ours and the average retailer in today's price crunching war.

Almost everyone we talk to will gripe somewhat about their biggest competition - the Mass Merchandisers. And I certainly understand their concern and fears because this affects us too, since we cater to the independently owned retailer and not the chain stores. However, I have some thoughts on this that I would like to share with you; that for some of you may not be worth the paper it's written on, but I hope they will at least be thought provoking.

I see garden centers constantly advertising extremely low prices on some plants like Azaleas @\$1.99, and I ask why? It seems they usually feel like they have to in order to compete with those mighty chain stores or maybe their own counterparts down the street. I say bull...! Since when did you see a Cadillac on sale for the price of a Ford Escort or on a smaller scale a box of Godiva chocolates for the price of a box of Brach's chocolates? Let's face it, we are not comparing apples to apples. It's more like their apples to our Royal Pears. Now for those of you who are buying in inferior plants on price alone to promote and compete with the chain stores, just hang it up. It won't work.

What should we advertise and how do we get the average public to come into our store and keep coming back? First, I think we must

buy quality plants. Second, we must have a very knowledgeable staff on hand that can answer or get an answer to all those crazy questions. You must give your customer extraordinary service above and beyond what they would expect. This staff must also be able to cross sell other things such as companion plants, fertilizer, chemicals, seed, etc. Third, you should have a much broader selection and assortment of plants to choose from than the chainstores. And fourth, and maybe most important in my opinion, is making the customer realize you really care. This can be done by having an individual or the sales person themselves making a follow up call within two weeks to check and see if they got everything planted okay and if they have any questions. They should also let these customers know that you have just gotten a beautiful new shipment of pansies or whatever in stock. You could do this in the form of a Thank You note, but the personal touch of someone's voice has far more impact. It is easiest to reach these folks in the evenings, and I'll bet someone on your staff wouldn't mind making sales calls. I know you're saying this is crazy, or we can't do this. Well, I think you can if you qualify who needs to be called or written by the dollar amount they have bought or if they are regular customers.

Now getting back to quality plants and advertising specials - I feel plants are a poor choice to run specials on because there is a distinct visual difference between a good quality plant and many of those advertised by the chains. So distinct that even your customer can tell the difference. To show this point go buy a few of their plants to show your customers, they will see the difference. Remember, a picture is worth a thousand words. So why not try advertising something like bagged lime, brown jersey gloves, or pine bark nuggets, etc. near or at your cost. I know, now you are saying there's differences in the quality of those products too. Well maybe, but let's take a sample of each of

these items and see if you or your customers can tell them apart. I doubt it!

Well, there's my case; and some of you thought Ross Perot was crazy! In order to track your customer in this fashion, you would need to have a good file system or be computerized. So give it a shot and set your goals to get your program implemented as soon as possible.

Go out and try selling your service, selection, and quality today; and you will be able to get your price tomorrow. If you don't, someone else will!

Preceding article reprinted from The Blooming Journal, Fall/Winter 1992, Volume II

HOW TO FIRE "THEY"

Gary Thornton
ALCA President

They did it! Last fall at the Crystal Ball meeting, the committee members were busily sharing their experiences on the implementation of Total Quality Management over the past year. I mentioned that in my company we were no longer accepting the excuse that "They did something" because we had fired "They" since he/she was constantly doing things incorrectly. Well Tom Lied of Lied's Nursery not only liked the concept, but found out that he too had employed someone from the infamous family They. I thought you might like a copy of their announcement since chances are very good that someone from the family They also works in your operation.

We've discharged a major employee and we want to share our reasons with you.

For quite a long time this employee has been referred to as being responsible for all manner of bad performance, attitude and decisions. Perhaps you may have been one who pointed out the problem.

At first we ignored the accusations, but after enough of you pointed your finger at this employee we began to be concerned. Late last year we carefully investigated the accusations. We agreed this person needed to be discharged immediately.

So, last week, your Executive "Liedership" Team assembled and WE FIRED THEY.

They does not work here anymore. We also found that They sometimes hid under the alias Them, so both They and Them are now gone.

I'm sure you've heard the accusations:

"They did not get the work done on time so my project is behind."

"I told Them how to plant the tree but They messed up."

"They know how to drive the truck, but They backed into the house anyway."

"They forgot to bring the saw."

"They really don't care if we are efficient."

"They didn't fill out the paperwork right."

These are some of the accusations, but there are lots, lots more. We are sure you know them.

So Now They doesn't work here and we are not going to replace They or Them. We will all need to get along without this employee's services. We have eliminated the position.

The result is obvious. Since They is no longer here, neither They nor Them can possibly be responsible for problems anymore. Just look at all the trouble we have eliminated by getting rid of They!

Incidentally, They was not out of work for long. Yesterday I went into a hardware store and could not find a price on a flashlight I wanted to buy. The clerk told me, "You're right. There is no price on the flashlight. They screwed up again." I am glad that They works in that store. They has apparently not learned from being fired here.

Many thanks to Tom for sharing this document, but be on the lookout, it has been my experience that They likes to work in the landscape industry and will likely be looking for work at your business this spring!

Preceding article reprinted from Landscape Contractor News, April '93.

TWO NEW LEUCOTHOES FROM MT. CUBA CENTER FOR THE STUDY OF PIEDMONT FLORA

Richard Lighty
Mt. Cuba Center for the
Study of Piedmont Flora

Mt. Cuba, the estate of Mrs. Lamnot du Pont Copeland, has a large number of *Leucothoe axillaris* clones planted throughout the garden. These have been purchased over the last fifty years, and some have attained a spread of eight to ten feet through the layering of branches. In 1983, eight of these were selected for evaluation for nursery production and landscape use. Some propagated with ease and others with greater difficulty. Twelve plants of each were planted out as liners, under field conditions. They were observed and evaluated twice a year until 1989. Qualities noted included vigor, habit, and leaf color, shape and freedom from disease. One clone was selected and named 'Greensprite'. In a parallel program, Natural Landscapes, a nursery in Jennersville, PA, selected and evaluated another plant growing at Mt. Cuba. Similar evaluation led to the naming and introduction of *Leucothoe* 'Redsprite'. These two cultivars have been registered and are available to propagating nurseries as unrooted or rooted cuttings depending on availability. They are described below.

Leucothoe axillaris 'Greensprite' - Mature plants have a height of 4-5' and a spread of eight feet. New canes are stiffly arching and bear leaves which remain green all year. The leaves are narrowly pointed with an undulate and serrate edge which gives further interest to the plant throughout the season, particularly when they catch sunlight. 'Greensprite' propagates readily and reaches salable size in three or four years. Container production has not been evaluated.

Leucothoe axillaris 'Redsprite' - Mature plants reach four feet in height and five to six feet in circumference. The leaves are flat and borne in a "herringbone" pattern. Young growth is reddish and the winter color is coppery-bronze. Growth is refined and twiggy. 'Redsprite' was selected by James Plyler, Jr. of Natural Landscapes.

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AUDITING YOUR TIME LEAKS

How much time do you lose through these 12 common time "leaks?"

1. Starting a job before thinking it through.
2. Doing unproductive things from sheer habit.
3. Keeping too many unnecessary records.
4. Paying too much attention to "low return on investment" items.
5. Failing to anticipate crises.
6. Making unnecessary visits or phone calls.
7. Socializing at great lengths between tasks.
8. Failing to build good barriers against interruptions.
9. Doing things that should be delegated.
10. Doing things that aren't part of the job.
11. Failing to plan regularly with your boss.
12. Engaging in personal work before starting business work.

REDUCE THATCH BY PROTECTING EARTHWORMS

**Lee Townsend and Dan Potter
Entomology Department
University of Kentucky**

Earthworms, called the "intestines of the earth" by Aristotle, are very important soil organisms that aid in the decomposition of plant litter, such as the thatch layer, and in recycling of nutrients. They help to break down and condition plant remnants in their gut. Their tunnels in the soil help oxygen and water enter the soil more easily and their castings (waste) enrich it.

Earthworms may be viewed as pests because their burrows and castings create a roughened surface. Since earthworms are a preferred food for moles, pesticides are sometimes applied in an effort to remove food so that the moles will go elsewhere. There is no scientific evidence that elimination of earthworms will reduce problems with moles. Earthworms make significant contributions to a fertile, healthy soil. Attempts to control them to reduce surface disruption can have severe consequences, especially in thatch build up.

Thatch is a layer of living and dead roots, stems, and organic matter that accumulates at the soil surface. Thatch accumulates when the rate of decomposition is much lower than the rate of grass growth. Use of certain fertilizers or pesticides may encourage an accumulation of thatch by increasing turf growth and/or killing beneficial organisms, such as earthworms.

Excessive thatch reduces penetration of water and other materials, such as fertilizer. It also encourages shallow grass roots which makes turf more susceptible to stress and pests.

A heavy build up of thatch can require expensive thatch removal techniques and ultimately complete renovation.

Earthworms break apart thatch and pull organic matter into the soil. They also mix large amounts of soil into the thatch layer. This aids in a more rapid breakdown of the layer by increasing microbial activity and enhances its properties for growth of turfgrass.

Earthworms are generally found in the top 12" to 18" of the soil because this is where food is most abundant. The worm ingests soil and organic matter which is swallowed and ground in the gizzard. The ejected material castings, are used to line the burrow or are deposited at the entrance. Earthworm activity depends directly on soil moisture and temperature. They become active when soil thaws in the spring and move deeper in late summer as the soil dries.

Pesticides and Earthworms

Pesticides applied to control turf diseases or insect pests may severely affect earthworms. This can be avoided by accurately identifying and assessing problems and, if a treatment is necessary, selecting products that have the least detrimental effect. Products commonly used on turf areas vary greatly in their toxicity to earthworms. Some pesticides can cause severe and long term reductions in earthworm numbers. Many of the common earthworm species grow slowly, live for several years, and have low reproductive rates. Consequently, re-population of poisoned soil is slow. Preservation of earthworms is important where thatch is a problem.

The following toxicity information for earthworms was obtained during a 3-year research project by the University of Kentucky entomology department.

Common Name Brand Name
Low Toxicity (0% to 25% reduction)

Fungicides:

chlorothalonil	Bravo
fenarimol	Rubigan
fosetyl-Al	Aliette
iprodione	Chipco 20619, Rovral
mancozeb	Dithane M-45, Manzate 200
metalaxyl	Ridomil, Subdue
myclobutanil	Nova, Rally
ropiconazole	Banner, Tilt
tebuconazole	Folicur
triadimefon	Bayleton

Herbicides:

dicamba	Banvel
dithiopyr	Dimension
isoxaben	Gallery
pendamethalin	Pre-M, Prowl, Ornamental Herbicide 2
proflamifone	Kerb
2,4-D	2,4-D
trichlopyr	Garlon

Insecticides:

azadirachtin	Margosan-O
bifenthrin	Talstar
cyfluthrin	Baythroid, Tempo
fluvalinate	Marvik
isophenphos	Oftanol

Plant Growth Regulators:

flurprimidol	Cutless
mefluidide	Embark

Moderate Toxicity (26% to 50% reduction)

Insecticides:

chlorpyrifos	Dursban, Lorsban
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diazinon	Diazinon, Spectracide
Common Name	Brand Name
isazofos	Triumph
trichlorfon	Proxol

Severe Toxicity (51% to 75% reduction)

Fungicide:

thiophanate-methyl	Fungo, Cleary 3336, Topsin-M
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Very Severe Toxicity (76% to 100% reduction)

Fungicide:

benomyl	Benlate, Tersan 1991
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Insecticides:

bendiocarb	Turcam
carbaryl	Sevin
ethoprop	Mocap
fonofos	Crusade, Dyfonate

To reduce detrimental effects:

- apply pesticides only when needed
- eliminate preventive applications, especially in the spring when earthworms are near the soil surface
- select products that are least injurious to earthworms and do not exceed labeled rates.
- if possible, treat only infested areas

Excessive nitrogen applications that greatly reduce soil and thatch pH can be detrimental to earthworms. Earthworms are generally intolerant of acidic soils (pH<6.0). Soil samples can determine fertility needs and allow management decisions that will help to maintain healthy turf and beneficial organisms.

Preceding article reprinted from Green Business Reporter, Penn State Cooperative Extension, Vol 5, No 3, June 1993

WHAT TO DO WHEN WORKERS LOSE INTEREST

Joe Carbon
Front Line Supervisor

"I don't understand it. That guy was real gun-ho when he got here. Now he spends all of his energy avoiding work and figuring out ways to do the least amount possible. I wonder what's got into him?" How many times have you asked yourself that same question? There are few things more frustrating to a supervisor than witnessing the case where a good worker gradually deteriorates into a marginal worker. A good supervisor has to take a completely different approach to a problem like this based on a different way of thinking. All it takes to uncover the shortcomings of the standard thinking is a closer examination of the question itself: "I wonder what's got into him?" The question implies that something might have invaded and destroyed what had been a perfectly good worker.

This idea of an "Invasion of the Productivity Snatchers" is of course absurd, and I only mention it to make a point. The question does imply that the problem is being blamed on forces beyond our control, even if not from beyond our solar system. And this is where we have to change our thinking, and our approach. As a supervisor, you are in a position to influence workers' attitudes towards their jobs. You are in a position to keep those good workers going strong. You are even in a position to improve the performance of marginal workers. Among the primary factors that influence worker attitudes are:

- the example that is set by, and the attitude of the supervisor

- the importance and value the supervisor attaches to superior job performance
- the consequences and penalties that the worker's supervisor has attached to inferior job performance;
- the degree of personal challenge the worker associates with performance that have been set by the supervisor

A good supervisor can't wait around for the personnel department to send them the perfect worker. Neither can a good supervisor expect superior worker performance by adopting a course of inaction. When we claim or imply that a problem has arisen due to forces beyond our control, we are doing little more than making an excuse for our own inaction. The job performance of your workers is a function of the attitudes they bring to the job. The supervisor is in a position to control the primary factors that influence those attitudes. A good supervisor will learn when and how to make this happen, and won't make or accept excuses.

Preceding article reprinted from NJNLA Newsletter, May 28, 1993.

GARDEN COUNCIL NEWS

Garden Council Votes to Place Promotion Order Before Industry

The Garden Council's Board of Directors voted to place a promotion order before the horticulture industry, John Darin, Jr., Garden Council president and vice president of English Gardens Nursery announced on July 30, 1993. The mail vote took place the week of July 19, 1993.

"Over the past four months, we have been researching what is involved in getting a promotion order introduced as well as how such orders have benefited other industries," Darin said. "We learned that other industries have had measurable results from the national marketing campaigns they were able to develop with promotion order funding. For example, the Pork Council increased production 12 percent in five years, and in the first year of its 3 year campaign, the Avocado Commission saw sales increase 110%. We also learned that, while implementing a promotion order is very involved, it could work within the horticultural industry."

A promotion order is an equitable means of funding a national marketing campaign. To be implemented, a promotion order must have the support of a majority of those industry members contributing to the funding of the promotion order and be passed into law by congress.

The Council's research included calls to many growers to explain a promotion order and to get their feedback on such an effort. The initial response was positive, with many offering support.

The Council's Executive Committee decided to ask for the Board of Directors vote

prior to the Board's August 6 meeting when calls to the Board indicated an overwhelming support of a promotion order. The Board meeting will focus on the next steps in placing an order before the horticulture industry. "We do not have all of the specifics of how the promotion order will work, or through which level the funding will be collected," Darin said. "Our next step is to develop the specifics of the program. In the next four months we will design and refine all of the details. During the first quarter of 1994 we plan to conduct an educational campaign within the industry to communicate the specifics of the program, including the focus of the national marketing plan, and get feedback. We will then incorporate the feedback into the program. At that time we will assess where we are and determine when congressional lobbying can start."

With more than 10,000 participants from all segments of the lawn and garden industry, the Garden Council promotes the joys and benefits of gardening.

Cultivate Your Fall Selling Season With the Garden Council's Fall is For Planting Marketing Program

From anonymity to prominence, the Garden Council's Fall is for Planting message continues to build momentum around the country, pulling the gardener back to the garden and -- more importantly -- back to the garden center. Retailers are pulling consumers into their garden centers with the Fall is for Planting theme and making the most of the important fall selling season using the Garden Council's Fall is for Planting marketing tools. Don't miss out on your chance to remind customers that fall's crisp days are a perfect time for planting and pruning, mowing and mulching, and the many other activities that can make next year's garden a prize winner.

Consumers may not be aware that establishing plants in the fall will yield sturdier, healthier results or that fall lawncare can really pay off the following spring. Retailers can refer to the Garden Council's Fall is for Planting Retailer Marketing Guide for marketing tips that effectively communicate fall planting strategies to customers. The guide contains a variety of in-store promotion ideas that can help retailers move more green and hard goods related to fall gardening, such as instituting a frequent shopper club, hosting Fall is for Planting workshops and sponsoring a pumpkin decorating contest for Halloween.

Most consumers are aware that fall is the time for planting bulbs. The Garden Council's Fall is for Planting brochure can help to educate consumers on other benefits of fall including the planting of shrubs and trees, lawn care and composting of leaves. This professional and attractive four-color, twelve-page brochure can be used to tap into customer enthusiasm and behavior shift that has been created by this successful, sales-generating program. The Fall is for Planting brochure is an excellent in-store giveaway providing customers with the handy tips they need to make the most of the fall planting season.

Create a fall festival look by incorporating banners, posters and shelf talkers into both indoor and outdoor displays of plants and shrubs, composting materials, fertilizer and accompanying tools and hard goods. Deliver a powerful message to your customers that translates into sales for your store.

The Fall is for Planting Retailer Marketing Guide and marketing tools can strongly enhance a retailers marketing efforts and increase sales. Call the Garden Council today, 312/661-1700, and make Fall is for Planting work for you.

PESTICIDE NEWS

INSECTICIDE V (carbaryl) from OM Scott is a new formulation labeled for usage on turf, trees, and ornamentals.

ETHION from FMC has deleted the usage on greenhouse ornamentals due to the high cost of re-registration.

PT 1325 ME DURAGUARD (chlorpyrifos) from Whitmire has received EPA registration as a water-based microencapsulated insecticide concentrate. It controls a number of insects, especially Western flower thrips in a safe formulation for sensitive flowering pot crops.

OLYMPIC NATURAL PLUS (pyrethrin) from Olympic Chemical has a new formulation containing PBO to be used on ornamentals, shade trees, and vegetables.

GALLERY 75 (isoxaben) from Dow Elanco has made the following label revisions: weed control list revised, new ornamentals species added, tall fescue removed from cool season grass list, added usage on ornamental bulbs and Christmas tree plantations.

MANAGE (MON 12000) from Monsanto is a new herbicide being developed for usage on turf to control nutsedge and other broad-leaved weeds.

PENNANT SG (metolachlor) Ciba has revised labeling to allow usage on commercial and residential turf and on non-crop areas including airports, roadsides, golf courses, sports fields, public recreational areas, ornamental gardens, cemeteries and other landscaped areas. Also may be used on container and field-grown ornamental non-bearing nursery stock and sod farms.

WEEDGRASS CONTROL 60WP (pendimethalin) from OM Scott is a new formulation recently released for weed control in ornamentals.

DERBY (metolachlor and simazine) from Ciba has had more than 100 woody ornamentals added to its label.

ROUNDUP SD (glyphosate) from Monsanto is a new dry formulation being introduced in 10-pound sealable jugs.

BANNER (propiconazole) from Ciba received EPA label for use by lawn care and landscape professionals on home lawns. Also added to the label was control of dollar spot and zoysia patch.

TERSAN 1991 (Benomyl) from duPont will have its registration voluntarily cancelled

FUNGICIDE 1X (chloroneb/thiophanate-methyl) from OM Scotts is a new formulation recently introduced for usage on turf.

SUBDUE WSP (metalxyl) from Ciba comes in a new water soluble package for usage on turf.

CHIPCO ALIETTE WDG (fosetyl-AI) from Rhone-Poulenc has a new label that allows use on roses grown in field, container, and landscapes to control downy mildew, and to suppress fire blight in ornamental pears, pyracantha and hawthorne.

MYCOSTOP (*Streptomyces griseoviridis*) from Kemira Oy is a new naturally-occurring bacteria approved by EPA as a biological fungicide. It is used to control Fusarium diseases in flowering crops. When used as a seed treatment, it controls damping off fungus.

RESEARCH BRIEFS

Salable cotoneaster and Leyland cypress plants were grown in nonporous smooth-walled, nonporous ridge-walled and porous-walled plastic containers. In porous-walled containers, when roots reached the outside edge of the growing medium, they stopped growing, resulting in a fine, fibrous root mass. Shoot growth of cotoneaster was improved in these containers. Root circling occurred in the nonporous ridge-walled container only at the bottom of the pot where it is easy to disrupt prior to planting. Many circling roots developed in the nonporous smooth-walled pots. (S.W. Privett and R.L. Hummel)

By altering irrigation management practices to reduce leaching fractions when water soluble liquid fertilizer is applied, the movement of nitrate nitrogen and its accumulation under the greenhouse is reduced. Reduced fertilizer rate and watering to obtain lower leaching fractions are recommended practices to reduce nitrate loading. (R.J. McAvoy, M.H. Brand, E.G. Corbett, J.W. Bartok, Jr., and A. Botacchi).

When seeds of *Echinacea* and *Coreopsis* were germinated in plugs under stressed conditions, primed seed performed better than unprimed seed. Under better conditions there was less of an effect from priming but primed seeds had greater root development which may affect transplant success. (T. Tinnerty and J.M. Zajicek)

Tiarella cordifolia (foamflower) can be easily propagated by tissue culture. Stage II micocuttings are fairly resilient and can be rooted by nurseries with little difficulty. These techniques allow rapid propagation and introduction of new and desirable plants to the public. (S.L. Kitto and A. Hoopes)

When evaluating trees for urban planting, look at soil conditions and microclimate effects. Shade-tolerance is required when trees are planted in the low-light urban canyon. Drought tolerance is important for trees planted in sited with extensive paving. (R.K. Kjelgren and J.R. Clark)

Post emergent applications of Acclaim, Poast and Fusilade caused injury to ornamental grasses. Acclaim and Poast caused less injury than Fusilade to most grasses tested. Treatment early in the season can be used as a last line of defense in controlling weeds in ornamental grasses, but landscapers and nurserymen should expect plant injury and reduced flowering during the season of application. (C.H. Gilliam, G.J. Keever, D.J. Eakes and D.C. Fare)

Preceding research briefs excerpted from Journal of Environmental Horticulture, Vol. 10, No. 3, September 1992.

Garden centers need to know how to meet their customers' needs to effectively market plants. Results of this study revealed that plant information was a principle desire of consumers and only 17% of customers had a specific idea of what plants to purchase. In accordance with consumer preference, information needs of consumers should be met by tagging individual plants with cultural information, having a plant expert available for consultation, and by supplying take-home pamphlets. Garden centers should offer a wide selection of quality plants with the requisite cultural information to encourage repeat customers as well as to attract new customers. (A.X. Niemiera, J. Innis-smith and C.E. Leda).

Preceding research briefs excerpted from Journal of Environmental Horticulture, Vol. 11, No. 1, March 1993.

The optimum day/night temperature for *Rhododendron maximum* production is 26/22 C (approx. 80/70 F). Use of this day/night temperature cycle may increase seedling development rate and result in a plant that more quickly attains a salable size. (M.C. Starrett, F.A. Blazich, and S.L. Warren)

At the University of Nevada-Reno, 'Bristol,' 'Challenger,' and 'Wabash' Kentucky bluegrass; 'Shademaster' creeping fescue; 'FRT-30149' fine fescue; and 'Aurora' hard fescue were identified as low water use cultivars. (G.C.J. Fernandez and B. Love)

Preceding research briefs excerpted from HortScience, Vol. 28 (7), July 1993.

Container plant runoff NO₃-N levels varied with sampling time and were periodically higher than the federal drinking water standard during the 4 1/2 months of sampling even though controlled-release fertilizers were used. Runoff NO₃-N levels were consistently less than container leachate NO₃-N levels, and there was no apparent relationship between runoff and leachate NO₃-N. Therefore, nursery operators should monitor container media leachate to ensure nutrient levels are adequate for growth in addition to monitoring runoff. (T. Yeager and G. Cashion)

Amending backfill soils for *Cotoneaster apiculata* and *Juniperus chinensis* 'Pfitzeriana Compacta' did not result in significant differences in root density in the backfill, nor did the amended backfill soil result in decreased root density outside of the planting hole. (G.W. Watson, G. Kuplowski and K.G. von der Heide-Spravka)

The capacity of plant materials to resume normal growth after exposure to low temperature is the ultimate criterion of cold

hardiness. The percentage of survival of five container-grown perennials was adequate when exposed to -10C (14F). Producers of container-grown perennials are advised to provide winter protection measures that prohibit root medium temperatures from falling below -10C (14F). (J.K. Iles and N.H. Agnew)

Preceding research briefs excerpted from HortTechnology Vol. 3 (2), Apr./June 1993.

To increase the amount of N available to plants and to decrease the amount of N lost via leaching, container growers should irrigate with the lowest leaching fraction possible. (A.X. Niemiera and C.E. Leda)

Given the compact, intensive nature of container production nurseries, concern for an environmentally sound method for delivering nutrients exists. Matching N release from fertilizers with crop growth, recovery of leachate using largely closed or contained systems, and production of rapid-growing species may limit loading of NO₃-N to soil and contamination of ground and surface water. (M.H. Brand, R.J. McAvoy and E.G. Corbett)

Most container-grown herbaceous perennials require winter protection if they are to survive low temperatures and wide winter temperature fluctuations typical of a continental climate. structureless overwintering systems are easy to assemble and maintain and can provide growers and retailers with an inexpensive method of protecting these valuable plants. Polyethylene/woodchip (containers arranged in 7 inch deep in-ground beds and covered with a layer of 4-mil poly and 1 foot of woodchips) and sandwich (two layers of 4-mil white poly with 1 foot fluffed brome grass/oat straw between the layers and secured with lumber) covers were the most effective in moderating temperature extremes and should be favored when

overwintering cold-sensitive species, but must be removed early in the season to prevent tissue etiolation. Translucent thermoblanket (a bonded 4-mil white polyethylene/microfoam 1/4 inch cover pulled tight over the plants and secured with lumber) covers prevented etiolation and would be appropriate for protecting hardier perennial species. This research was conducted in Iowa. (R.K. Iles, N.H. Agnew, H.G. Taber and N.E. Christians)

Preceding research briefs excerpted from Journal of Environmental Horticulture, Vol. 11 (2), June 1993.

WELCOME NEW MEMBERS

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Grass Roots, Inc.
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The Postproduction Series: Potted Plants by Terril Nell, **Bedding Plants** by Allan M. Armitage, **Cut Flowers** by John N. Sacalis, **Foliage** by Thomas Blessington/Pamela C. Collins. These books outline the specific requirements growers, shippers, retailers and consumers need to extend the performance and the quality of ornamental plants. For more information contact, Ball Publishing, Tel:(708)208-9089, FAX: 1-800-456-0132.

Are Quarantines Buggin You? New Federal/State Summary Available. This publication provides important information on dealing with federal and state quarantines affecting interstate shipment of nursery and greenhouse plants. Cost for AAN Members \$22.50/Non-AAN Member \$27.50. For more information, call AAN, Tel:(202)789-2900, FAX:(202)789-1893.

Eureka! by Ken and Kay Gregory. This 1993 national daylily locator is 192 pages including: the '93 introductions, their hybridizers, heights, bloom dates, colors, ploidy, and prices, etc. "Eureka!" sells for \$14.50 and can be ordered from the Gregorys by mail at 5586 Quail Creek Dr., Granite Falls, NC 28630.

Computer Spreadsheet and Compiler to Extend Growth Models to Greenhouse Growers Available for \$30. Make Checks payable to: Rutgers the State Univ. and send to: Gary Huntzinger, Rutgers Cooperative Extension, Office of Computer Services, P.O. Box 231, Blake Hall, New Brunswick, NJ 08903-0231 (908-932-9279)

September 9, 14, 16, 21 - Ornamentals Short Course - Disease Diagnosis & Control. 3-5 P.M., Fischer Greenhouse, University of Delaware campus. Tel:(302)831-2531.

September 15 - Delaware Herb Growers and Marketers Assoc., Center for Agriculture & Natural Resources, Delaware State College, Dover, DE. Time: 7:30 P.M.-9:00 P.M. Contact Dr. Art Tucker. Tel:(302)739-4929 or Jo Mercer (302)831-2506.

September 15 - Estimating for Residential Landscape Installation Workshop. Time: 9:00 A.M.-4:00 P.M. Penn State Great Valley, Malvern, PA. Contact Russ Powell. Tel:(215)345-3283, Rick Johnson (215)565-9070.

September 18 - 10th Annual Harvest Festival. The Delaware Center For Horticulture, 1810 North DuPont Street, Wilmington, DE. 10:00 a.m.-4:00 p.m. All activities are free. For additional information, call the Delaware Center for Horticulture at 658-6262.

September 21 - Garden Center and Landscape Nite-Lite Meeting. Consumer research findings, pest walk and lawn renovation. The Gooseberry Bush Nursery. Contact Russ Powell (215) 345-3283.

September 22 - Garden Center and Landscape Nite-Lite Meeting. Consumer research findings, pest walk and lawn renovation. Garden Spot Nurseries. Contact Russ Powell (215) 345-3283.

September 23 - Garden Center and Landscape Nite-Lite Meeting. Consumer research findings, pest walk and lawn renovation. Centerton Nursery. Contact Russ Powell (215) 345-3283.

September 23 - International Plant Propagators Society, Eastern Region Area Meeting. Announcing a one day plant propagators' meeting. "Back to Basics", Winterthur Museum and Gardens, Delaware. Contact Shelly Dillard (215)247-5777, Ext 118.

September 27 - October 1 - 1993 Professional Courses. Wetland Delineation, Environmental Concern Inc., St. Michaels, MD. Tel:(410)745-9620, FAX:(410)745-3517.

September 29 - Estimating and Bidding for Landscape Maintenance Workshop. Time: 9:00 A.M.-4:00 P.M. Penn State Great Valley, Malvern, PA. Contact Russ Powell. Tel:(215)345-3283, Rick Johnson (215)565-9070.

October 1 - AABGA Mid-Atlantic Regional Meeting. Winterthur Museum, Garden/Library, Winterthur, DE. 9-4 P.M. Contact AABGA. Tel:(215)588-1120.

October 4 - 1993 Professional Courses. Restoration & Maintenance of Shorelines for Bank Erosion Control and Wildlife Habitat. Environmental Concern Inc., St. Michaels, MD. Tel:(410)745-9620, FAX:(410)745-3517.

October 5, 7, 12, 14 - Ornamentals Short Course - The Basics of Ecological Landscape Design. 4-6 P.M., Worrilow Hall, University of Delaware campus. Tel:(302) 831-2531.

October 7, 14, 28 and November 4 - Starting a Small Business. Bristol Township Municipal Building, Levittown, PA. Penn State Extension. Contact (215)345-3283.

October 7, 14, 21 and 28 - Penn State Professional Landscape Management Program - Focus on Diseases of Ornamentals. Farm and Home Center, Lancaster, PA. Contact Bruce Hellerick (814)865-1847.

October 14 - Nursery Production Bus Tour. Visit 5 nurseries in New Jersey. Sponsored by Penn State Extension and PNA. Contact David Suchanic (215)489-4315.

October 19 - Perennials Conference. Swarthmore College. Contact PA Hort Society. Tel:(215)625-8250.

October 20 - Delaware Turf Grass Conference, Hockessin Memorial Hall, Hockessin, DE. Time: 8:00 A.M. - 4:00 P.M. Contact Susan Barton. Tel:(302)831-2531 or Linda Pevey (302)653-1021.

October 23-26 - Produce Marketing Association Convention & Exposition, Washington, D.C. For more information contact Maureen Coffey or Kathy Means, PMA. Tel.:(302)738-7100, FAX:(302)731-2409.

October 27-29 - Three day Composting Program. Co-sponsored by the Extension Service, the Dept. of Horticulture/U. of MD-College Park and the Dept. of Agricultural Engineering/U. of MD-College Park. Ramada Inn Hanover, MD (near BWI Airport). For more information call K. Marc Teffeau. Tel:(410)479-5757.

November 1 - 1993 Professional Courses. Wetland Permits Made Easy. Environmental Concern Inc., St. Michaels, MD. Tel:(410)745-9620, FAX: (410)745-3517.

November 2 - Cut Flower Program. Cooperative Extension Service, Maryland Institute for Agriculture/Natural Resources, Caroline County. Del-Mar Convention Center,

Delmar, MD. Contact K. Marc Teffeau (410)479-5757 or Jean Scott (410)749-6141.

November 7-9 - Sports Turf Manager's Association Annual Conference and Exhibition, Oriole Park at Camden Yards, Baltimore, MD. Contact Lisa Bruno, STMA. Tele:(312)644-6610.

November 14-18 - ALCA Exterior Landscape & Grounds Maintenance Conference, Baltimore, MD. Contact: ALCA. Tel:(703)620-6363, FAX:(703)620-6365.

November 14-18 - ALCA Certified Landscape Professional Exam, Baltimore, MD. Contact ALCA. Tel:(703)620-6363, FAX(703)620-6365.

November 15 - Green Industry Expo, Sponsored by ALCA, PLCAA, & PGMS, Baltimore Convention Center, Baltimore, MD. Tel:(404)973-2019.

December 3-6 - 43rd Annual Meeting, Eastern Region, International Plant Propagators Society, Amway Plaza Hotel, Grand Rapids, Michigan. For program/registration information contact: Dr. Darrel Apps, 824 Williams Lane, Chadds Ford, PA 19317. Tel:(215)388-6901, FAX:(215)388-1723.

December 15 - DE/MD Turf and Ornamentals Workshop. Sheraton Inn, Dover. Contact Susan Barton (302) 831-2531.

December 17 - Pesticide Safety for Landscape Contractors Course. Rutgers University. Tel:(908)932-9271.

January 2-7 - Maryland Cooperative Extension Service Advanced Landscape Plant IPM Short Course. University of Maryland. Contact David Laughlin. Tel:(301)405-7665.

January 4-6 - 1994, Winter Mants. Baltimore Convention Center, MD. Contact Carville Akehurst. Tel:(410)245-1799, FAX:(410)256-2208.

January 4,11,18,25 - Intermediate Landscape Design Course. Rutgers University. Tel:(908)932-9271.

January 7, 14, 21, 28 - Urban Forestry Course. Rutgers University. Tel:(908)932-9271.

January 7-March 18 - (11 consecutive Friday afternoons), Basics of Landscape Design Course. Rutgers University. Tele:(908)932-9271.

January 7-March 18 - (11 consecutive Friday afternoons) Basics of Plant Materials for Landscape Use Course. Rutgers University. Tel:(908)932-9271.

January 10-11 - Greenhouse Systems, Design and Environmental Control Course. Rutgers University. Tel:(908)932-9271.

January 10-13 - Maryland Cooperative Extension Service Advanced Turfgrass IPM Short Course. University of Maryland. Contact David Laughlin. Tel:(301)405-7665.

January 18-19 - Delaware Horticulture Industry Expo, Sheraton Inn, Dover, DE. Time: 8:30 a.m.-4:00 p.m. Contact Susan Barton. Tel:(302)831-2531 or Linda Pevey (301)653-1021.

January 24- 27 - Professional Horticulture Conference of Virginia, Ltd., Virginia Beach VA. For information call Tom Tracy or Polly Carden, Tel:(804)523-4734.

January 31 - 4th Annual Pesticide Conference, Sheraton Inn, Dover, DE (Note change of location). Time: 8:30 A.M. - 3:30 P.M.

Recertification credit will be awarded. Registration required. Contact Susan Whitney. Tel:(302)831-8886.

February 1,8,15 - Intermediate Landscape Design Course. Rutgers University. Tel:(908)932-9271.

February 4 - Urban Forestry Course. Rutgers University. Tel:(908)932-9271.

February 7-8 - 29th Annual Shade Tree Symposium and Trade Show. Penn-Del Chapter, International Society of Arboriculture and Penn State University Cooperative Extension. Lancaster Host Resort and Conference Center, Lancaster, PA. Contact Elizabeth Wertz, P.O. Box 293, Bedminster, PA 18910. Tel:(215)795-2096.