

**FROM THE DESK OF THE PRESIDENT
Christopher Valenti, President, D.A.N.**

I hope as you read this column, you can look outside your window and see a persistent, steady rain. This has been a very tough year weather-wise for our industry: record heat, and on the heels of the inferno, record drought. Each of our businesses has been affected to some degree, by reduced sales in garden centers, fewer calls to landscapers, depressed plant growth at nurseries and turf diseases at homes and fairways. Perhaps the most serious problem is the current water rationing in upper New Castle County. As your association, we came to bat for you (something like Cal Ripken!). One of our members told us about the water police being stationed outside his business, ready to shut off his water if he failed to comply with his utility's rationing scheme. Marianne and I immediately began to gather facts and contact appropriate state agencies. We convened an emergency association meeting at the College of Agriculture to develop strategies for immediate and long-term consequences of this drought. On Sept. 11th, after preliminary negotiations with DNREC, we presented our industry's needs at a hearing in Wilmington convened by DNREC. As a result, our officials listened, and developed a water management plan that meets the needs of our industry based on our members' suggestions. In fact, Gerald Esposito, of DNREC told me that if any of our members were adversely affected by the water restrictions, for the D.A.N. to let him know and he will listen to their needs. Both Jack Tarburton, Secretary of Agriculture, who acted as the nurserymen's advocate to the governor and Jerry Esposito should be commended for their concern and expertise in handling a delicate situation. It is gratifying to see state agencies work so diligently to aid our industry. In fact, I would urge our members to thank them personally.

The drought is not over and conditions can get worse. We are monitoring the situation and will let you know as soon as situations change. To help us give you an instant alert message when an important issue arises, give us your FAX numbers. We could then stay in touch with you at the speed of light!

GOVERNOR'S EXECUTIVE ORDER

The following is an excerpt from the governor's Executive Order Number 35:

2. Pursuant to 20 Del.C. 3133, the following uses of water are prohibited in northern New Castle County effective immediately except where specifically indicated to the contrary:
 - b) Effective September 19, 1995, the use of potable water by commercial and retail nurseries except in the minimum amount necessary to maintain stock with application limited to no more than six hours daily which may be divided into no more than two periods of watering in accordance with a written plan submitted to DNREC specifying the specific hours during which such watering will occur.



ASSOCIATION NEWS
Marianne McGloin
Executive Director, D.A.N.

Well, I cannot believe summer has come and gone, and the stores have reminded everyone that the holidays are just around the corner. The hot, dry summer has taken a toll in Delaware. Northern New Castle County is under a drought emergency and mandatory water restrictions have been imposed in that area. Anyone with any questions or concerns about these water restrictions, please do not hesitate to call the D.A.N. office anytime.

At least it did not rain at this year's Summer Expo. It turned out to be a gorgeous day. The show was a success! We had a record-breaking number of exhibitors and attendees. The day was enjoyed by all!

I would like to take this opportunity to thank the Wick Family for hosting the event and for their tremendous effort in preparation for the show. I would also like to thank board members (and past members): Diane, Hill, Norm Hedrick, John Apgar, Naomi McCafferty, Craig Rice, Chris Valenti, Jaime Jamison, Linda Pevey and Sue Barton for helping set up and assisting me with my first show. I really appreciated their help. Last but not least, thank you to our social committee chairman, John Ellingsworth for delivering the beer to the show.

At the Summer Expo this year, we announced the recipients of the D.A.N. Hall of Fame Award. This award recognizes leaders in the Delaware nursery industry who have contributed to the industry and the D.A.N. throughout their careers. This year's recipients were Joseph Wick, Wick Nurseries and Frank and Isabel Smith, Frank J. Smith Nursery.

A few reminders: the Crabfeast will be held on September 27 at Boondocks in Smyrna from

6:00 to 9:00 p.m. It should be a fun time for all and I hope to see everyone there.

The next CNP exam is scheduled for October 25 at the Dept. of Ag. in Dover, DE. Contact Marianne for applications and manuals. The CNP is a great way to motivate your employees and measure progress that might result in promotion or salary increases.

The Delaware Turfgrass Conference will be held on November 15, at Hockessin Memorial Hall, Hockessin, DE. Our key speaker will be Dr. Dave Shetlar from Ohio State University. Booths are still available but space is limited, so reserve your booth now!

The Delaware Horticulture Industry Expo is January 17 and 18, 1996. Currently there are twenty-five exhibitors. The cost of a booth is \$300.00. Please call Marianne if you are interested in exhibiting at the show.

Quote for the Quarter:

Success is getting what you want. Happiness is liking what you get.

H. Jackson Brown, *A Father's Book of Wisdom* (Rutledge Hill)

Hope to see everyone at the Crabfeast!

Marianne

U OF D NEWS
Susan Barton
Extension Specialist

The Ornamental Short Course Series Session III will begin with Pruning and Landscape Maintenance on September 19 and 21. We are excited to offer you a new series--Basics of Business Management that begins on September 25th. This short course is cosponsored by Delaware Cooperative Extension and the Small Business Development Center. Speakers will include business professionals familiar with the nursery industry, experts on environmental and workplace regulations from DNREC, Small Business Development Center staff and University faculty with expertise in nursery, garden center and landscape management. We think you will enjoy and learn a lot from the lineup we have prepared. We finish out the 1995 ornamentals short course series with Ecological Landscape Design taught by W. Gary Smith, associate professor in Plant & Soil Sciences for four sessions in October. If you have misplaced your short course flyer, call Dot Milsom (831-2531) and we'll send you another. Register now to ensure a space in these classes!

The Turf and Nursery Expo educated over 250 people on exciting new perennials (Dale Hendriks, North Creek Nurseries), preventing common plant problems (Jay Windsor, DE Coop. Extension), handling B & B and bare root plants (Sue Barton, DE Coop. Extension) and turf and landscape weed control (Gordon Johnson, DE Coop. Extension). The hurricane held off and the roast beef lunch was as fabulous as ever!

This year garden center operators have the opportunity to visit three fabulous garden centers during their Christmas seasons. The tour, sponsored by Delaware and Pennsylvania is scheduled for November 9, 1995. We will visit Valley View Farms, The Behnke Nurseries,

Co., and Homestead Gardens, in Maryland. Each of these garden centers has a fantastic Christmas shop. If you do Christmas or are contemplating a new shop or expansion of your current shop, you won't want to miss this trip. Look for registration flyers in late September.

The Delaware Turfgrass Conference is scheduled for November 15, 1995. We have lined up a great headline speaker--Dave Shetlar from Ohio State University. He will give two talks: "Improved monitoring and sampling to better time insect and mite control in the landscape" and "Biological, biorational controls for turfgrass insects: The ones that work and the ones that don't." We also have a turfgrass panel from three seed companies to discuss new seed varieties, a talk on promoting wildlife on golf courses and a look at tree root growth and how that impacts landscape plant success. Again,. look for a flyer in late September.

Many of you have expressed interest in a class taught by Gary Smith and myself this past spring entitled "Designing the Urban Forest." The 16 students in the class worked with the city of New Castle to create an urban forestry plan and three specific site plans for areas within the city. The class included fabulous guest lectures from Nina Bassuk (Cornell University), Jim Urban (Urban Associates) and representatives from Philadelphia Green, DNREC and the Delaware Department of Agriculture. We are developing a new class entitled "Urban Horticulture" to be offered next spring (1996). We will be working with the Delaware Center for Horticulture to provide case studies for projects. We have published the New Castle Urban Forestry Plan which documents both the class and the recommendations to the city. Copies are available by calling Dot Milsom (831-2531). If you are interested in next spring's class, let me know.

NURTURING EFFECTIVE SERVICE RECOVERY

The following article was adapted from a presentation by Aby Kristin Anderson of Performance Research Associates, Inc., Minneapolis, MN at the Associated Landscape Contractors of America Landscape Grounds Maintenance Conference in St. Louis, MO.

You just finished a major landscape installation for a new office park - shrubs, trees, flowering plants, sprinkler system...the works. Four days later you receive an irate telephone call from your on-site contact. It seems that one of the tenants left a window open overnight. When the sprinkler system came on, one of the heads was misdirected toward the building. Water came in and soaked a computer, the desk and the surrounding carpet. The desk will recover, the carpet will dry out, but the computer is toast! What are you going to do about it?

Effective service recovery involves taking thoughtful, positive actions to lead unhappy customers back to a state of satisfaction with your organization. It's not about "giving away the store." It's about responding to service breakdowns with smart business decisions that keep your customers as your customers - and that make you money.

A service breakdown is anytime your customer is disappointed or when the service fails to meet the customer's expectations. Notice, that the definition does not say that a service breakdown occurs because we did something wrong. Sometimes we do, but customers are often disappointed because they expected something we can't or simply don't provide, or because of problems they cause themselves - like over watering.

Whatever the reason, when the customer is experiencing breakdown we have to engage in

proactive effective service recovery. If we don't, we will lose the customer and the income that customer generates.

Fortunately, there is a consistent way to create effective service recovery. Here is a simple six step model you can use and teach to your crews.

The Six Step Road to Service Recovery:

1. Apologize/Acknowledge the Situation
2. Listen, Empathize, Ask Open

Questions

3. Fix the Problem
4. Offer Atonement
5. Keep Your Promises
6. Follow Up

Step 1 - Apologize

The first step is simply to say "I'm sorry." We often don't want to say "I'm sorry" because it sounds like "I did it, it's entirely my fault." We'd rather say, "What sort of stupid person left a window open all night? Didn't security notice anything?" Apologizing is not about accepting or placing blame - "I'm sorry your tenants are too stupid to close windows." It is about acknowledging that the customer's upset concerned about the situation.

Step 2 - Listen, Empathize, Ask Open Questions

Before we fix a problem, we have to understand it, and how it is impacting our customer. This is the "tell me exactly what happened" stage. As you listen to your on-site contact, you may learn that there is more at stake here than a single computer. If this tenant moves out over this incident, will the office park blame you? Does your contact simply need to vent to someone? Are there other "open window" type of problems that weren't anticipated during installation?

Use this step to build a feeling of partnership - that you will work with your customer to resolve this situation.

Step 3 - Fix the Problem, Fairly and Quickly

Fair means that your customer never feels cheated or taken advantage of during the fix. Fair means that it is a good business decision for you in the long run, not just for today. Involve your customer in developing solutions. Ask, "What do you think would be fair?"

When you are considering how much money you will be willing to spend to correct the problem, think in terms of the total dollar value of this customer over the life of the relationship, and consider too the power of word-of-mouth, the way your customer will talk about you to other potential customers.

In most situations, this is all you have to do. Apologize, listen and then do something about it. However, if the service breakdown is complex and will take many hours or even days to correct, or if the customer is feeling victimized - injured twice by the breakdown - then you may need to go farther in the process.

Step 4 - Offer Atonement

Atonement is a gesture that says to the customer, "I want to make it up to you." We sometimes talk about it as "fix plus one." Offer atonement after the problem is solved. For example, send a letter or note thanking the customer for telling you about the problem and for working with you to find a solution. Send a floral arrangement directly to the tenant.

Step 5 - Keep Your Promises

This step is here as a reminder. Service breakdown often begins with the customer's perception that a basic service promise has been broken. As we solve complex problems, it is

inevitable that we will make additional promises - "I'll call you this afternoon" or "The crew chief will check all of the sprinkler heads before you get to work tomorrow." Those promises take on extra importance. Keep them.

Step 6 - Follow Up

Follow up has two parts. The first part is to follow up with your own team. If they were part of the "fix" you negotiated - checking sprinkler heads, looking for other potential problems - make sure everything has happened as planned. You need to ensure that no other customer is experiencing a similar service breakdown.

The second part to follow up happens with your customer. Take the time to talk with your customer and to make sure everything is back on track and that there are no other service breakdowns needing your attention. Ask for feedback about the way you handled the problem - what did you do well, what would your customer like you to do differently next time.

If you need to reeducate your client, or to renegotiate part of your contract, now is the time to do so - after the problem has been solved.

No matter what happens, or why, it is better to handle service breakdowns directly and effectively, than to ignore them in hopes they'll go away, or to muddle through while hoping for the best.

Effective service recovery will make you money. It builds customer loyalty and helps to lessen customer sensitivity to small price differences between you and your competition, it often increases the depth of your customer relationship as customers look for other ways and other locations in which to use your services, and builds new business through customer referrals.

Reprinted from *NJNLA info letter*.

BUY OR DIY?

George Staby

Researchers in the 1970s determined that purchased growing media offered several advantages over making one's own. Is this still true in 1995? This article reexamines the issue.

Fungicides, insecticides, growth regulators and growing media are all very important in floral crop production. They also are chemically complex. Unlike the other three, growing media must possess certain physical and biological characteristics, such as proper air/water capacities and microbial activities. Most growers would never consider producing their own fungicides, insecticides and growth regulators, yet many of them make their own growing media. Since growing media frequently are more complex than the other products, why do growers want to make their own? Several seemingly good reasons exist.

- 1) They may cost less.
- 2) Growers can add the ingredients they require, instead of depending on the formulations available in the marketplace.
- 3) Growers can put their growing media knowledge and experience to good use.

Growers should consider several points before deciding to purchase or make their own media.

- The quality and consistency of any growing media are only as good as the raw materials being used. Therefore, growers must know how to specify wetting agent brands and rates, soluble salt levels, particle sizes, and lime types, while combating sterility concerns. Analytical equipment also is required to measure the quality of raw ingredients. If this equipment is unavailable, a technical service company must be hired to test ingredients before they are used. Of special concern is the possibility that ingredients may be contaminated with

undesirable substances such as herbicides, excess nutrients, or heavy metals, which are often difficult to detect.

- Once any mix is prepared, certain chemical and physical quality measurements must be made before it is used. These analyses include specific nutrient levels, total soluble salts, pH, wetting and percolation rates, and air/water-holding capacities.
- There is no recourse if a grower-made mix does not perform correctly. On the other hand, if there are problems with purchased growing media, reputable manufacturers will stand behind their products.
- Even when grower-made mixes can be shown to be less expensive, claims of "more than 50 percent savings" are almost always overly optimistic with little supporting data. Possible savings in the range of \$10 per cubic yard are much more realistic. Assuming a saving of \$10 per cubic yard, and a wholesale price of \$3.50 for a 6" potted plant, a mistake in making one yard of mix could cost the grower up to \$1,500 in sales. Thus, the \$10 saving for one bad yard of mix could negate possible savings on an additional 150 yards.
- Many growing media manufacturers offer custom blends. This alternative might be better than attempting to make one's own.
- If growing media that performs satisfactorily can be purchased, then growers can spend more time on the numerous other projects required to produce high quality flowers and plants.
- Less than desirable growing media are occasionally available in the marketplace. Georgia's Legislator and Governor recently implemented regulations to help ensure that only high quality growing media are offered for sale. These actions have actually improved awareness of growing media quality issues throughout the U.S., Canada, and Mexico.

- Many growing media manufacturers support their products with technically trained staff and laboratory testing facilities. Growers can take advantage of these services, regardless of the mixes they are using.

Since most growers have equal opportunities to purchase the same materials, differences in plant and flower quality can be attributed mainly to how these materials are used. Growers should therefore consider purchasing their growing media, just as they would growth regulators, fungicides, and insecticides.

Reprinted with permission from *Greenhouse Business*, July 1995.

THE NURSERY INDUSTRY'S ROLE IN AVOIDING TREE UTILITY LINE CONFLICTS

Dr. Bonnie Appleton
Virginia Tech

Here are some suggestions for how the wholesale nursery industry can help alleviate the perennial problem of unnecessary expenditures caused by trees growing into power lines.

- Provides smaller trees and start training some large shrubs.
- Educate your clients who specify trees for utility line planting, letting them know that good alternatives are available.
- Fill a niche by setting up a nursery to produce trees for this purpose, either independently, or in cooperation with your local utility company.

Excerpted from "Provide plants that avoid tree-utility line conflicts," *Nursery Management and Production*, July 1995.

CUSTOMERS AND PESTICIDES

Dr. Sue Snider
Delaware Cooperative Extension

Growers often encounter customers who are concerned about the use of pesticides on plants they purchase at a local greenhouse, nursery, or garden center. A customer's interest may be especially peaked if they happen to visit production and holding areas on spray days. So how should business owners and employees respond to Mrs. Jane Q. Public when she asks, "What is that stuff you're spraying on those marigolds?", or "Do I need to wear gloves when I repot this ficus?" And How would you respond to your church's pastor, as he purchases 300 poinsettias, and asks, "What is that granular stuff on the top of the soil?"

All owners and employees who interact with customers, either in wholesale or retail operations, should have a well thought-out plan to effectively address their customers' concerns about pesticides and their use. The following checklist will help you think about your plan:

- **Consider the customer's point of view as you prepare your plan.** Many customers don't know a lot about production agriculture. Much of what they do know may come from media coverage, friends, co-workers, or their own limited personal experience. If a customer asks questions, view this as an opportunity to convey information about your operation and how you use pesticides to protect your plants.
- **Determine who should address customer questions.** The immediate response may be everyone who has contact with the public. For smaller operations, this may be appropriate. In a larger operation, it may be best to designate certain individuals to answer customer inquires about pesticide use. These

individuals need to be well versed in pesticide use and be able to communicate effectively.

- **Conduct staff training.** For those employees who will be referring the customer to someone else, training may be nothing more than who will handle the question and how to graciously and courteously refer the customer. Individuals who are designated to answer the question need more training. They need to understand how pesticides are approved and regulated, what specific pesticides are being used, and why they are being used. These employees should also keep abreast of current consumer concerns since these will often fuel the questions they will get.
- **Share not only what is used, but why it is used.** Customers may not be aware of all the benefits of pesticides and how necessary they may be in producing a crop.
- **Answering customer questions about safety.** If a customer asks if a pesticide is safe, indicate that it is an approved chemical for that crop and is used as label directions specify. Also indicate that the pesticide you use has been approved by the EPA after they fully examine safety and environmental impact data.
- **What NOT to do.** Don't think of a customer's concerns as being unjustified. Don't become combative. Don't become defensive. Don't take questions personally.

Planning ahead of time for a customer's questions, and answering them effectively, could be the difference in making, or not making, a sale.

POINSETTIA PROBLEMS

Thomas M. Contrisciano
Penn State Cooperative Extension

It's THAT time of year again. Why is it that in January when I see early bedding plant production I never feel that spring is just around the corner, but when I see poinsettia production beginning in August, I feel that I should be starting my holiday shopping? Well anyway, the following information on poinsettia diseases was compiled by Dr. Gary Moorman, Plant Pathologist, at Penn State University. For both experienced and novice poinsettia growers alike, I suggest reading over the list when you begin your crop production. Check those cuttings coming in thoroughly for pests! In addition, pay close attention to recommendations for preventing some diseases, like bacterial stem rot, by using "clean" media, pots, tools, and other supplies.

Monitor your crop for disease every few days. Disease problems can really spread quickly through a poinsettia house, especially as light levels and outdoor temperatures drop in late October and November.

The following is a list of problems that poinsettia growers may encounter:

Ammonium toxicity: Root and top growth is restricted. Lower leaves yellow while leaf margins burn. Favored by low light and low temperature in late fall, acidic potting mix, and exclusive use of ammonium nitrogen source. Prevent by not using ammonium nitrogen sources exclusively. Also do not overwater during periods of low light and low temperature.

Bacterial stem rot: Cuttings develop a soft rot at the base which moves upward quickly and kills the cutting. Wounded stems of older plants develop soft rot and lodge. Bacterial stem rot is

caused by *Erwinia carotovora*. Prevent by using pasteurized propagation media. Discard infected plants, crop debris, and infested media. In addition, disinfect tools in sodium hypochlorite or bromine disinfectant.

Botrytis flower rot: Brown spots form on flower, leaf, or stem tissue. The problem is caused by *Botrytis cinerea*. Prevent botrytis flower rot by avoiding damaging plants, and also removing damaged tissues. Other preventive methods include spacing plants to provide good air circulation and heating and venting to reduce humidity. If these practices are followed, then fungicides can help in management. Apply chlorothalonil (thermal smoke) to dry foliage, not blossoms; or viclozolin to foliage.

Botrytis stem canker: Large, light brown to tan, slightly sunken cankers form on older stems especially near large branches or crotches. Defoliation and death of branches occur above cankers that girdle stems. Caused by *Botrytis cinerea*. Prevent by avoiding damaging established, well-branched plants. Apply vinclozolin to stems.

Leaf drop: Defoliation occurs. Can be caused by root rot, overfertilization, low light intensity, or lack of moisture. Prevent leaf drop by avoiding root rots and overfertilization. Also remember to clean the greenhouse covering, space plants well, and maintain even soil moisture levels.

Magnesium deficiency: Yellowing develops between the veins of mid and lower leaves. Prevent magnesium deficiency by using a magnesium-containing limestone in the potting mix and applying a magnesium-containing fertilizer.

Molybdenum deficiency: Yellowing is followed by burning of lower leaf margins. Lower leaf margins are cupped downward.

Problem is caused by the lack of molybdenum or acidic pH potting mixes (pH 4.5 to 5.5 on some cultivars). Prevent molybdenum deficiency by using lime to adjust the media pH above 5.5, and using a fertilizer containing molybdenum, or use a complete minor element supplement, or add sodium molybdate to soluble fertilizer.

Overfertilization: Plants are stunted. Lower leaves yellow and fall. Leaf margins yellow and burn. The combined use of slow-release and soluble fertilizer, or soluble fertilizer use with no leaching, favors this. Conductivity readings at or above 100 mhos x 10⁻⁵/cm for soil or 250 mhos x 10⁻⁵/cm for soilless mixes (1:5 dilution) are excessive. Do not combine the use of slow-release and soluble fertilizers. In continuous feed programs, 10% of the soluble fertilizer applied should leach out the bottom, or clear tap water should be applied every second or third watering. If soluble salts become excessive, leach heavily, wait overnight, and leach again.

Powdery mildew: Yellow spots form on the upper surface of leaves. White fungal growth in patches is seen on leaves and bracts. Problem caused by *Oidium*. Always scout stock plants frequently and inspect cuttings as soon as they arrive. Immediately remove any infected leaves. Continue scouting throughout the season. Apply thiophanate methyl, copper sulfate, thiophanate methyl + mancozeb, iprodione, or triflumizole as soon as any mildew is found. Control must prevent disease before bracts form. Fungicides do not "clean-up an infected plant.

Pythium root rot: Early in season, the rooted cuttings are stunted, yellow, and wilting. Roots are dark brown and the outer layers of root tissue strip off, leaving a bare strand of inner vascular tissue exposed. Later in the season, plants defoliate and flower prematurely. This problem is caused by *Pythium* sp. Prevent by using pasteurized soil, clean pots and tools. Also keep hose ends off the ground. Do not overwater or

overfertilize plants. Apply etridiazole, metalaxyl, etridiazole + thiophanate methyl, or propamocarb as a soil drench.

Rhizoctonia root rot: Early in the season, cuttings wilt and yellow. Roots are rotted. Lower stems below ground may have a shredded appearance. Later, stunted plants defoliate, flower prematurely, and die. Sunken dark brown areas on stem may reach slightly above soil line. *Rhizoctonia solani* is the cause of this root rot. Prevent by using pasteurized soil, clean pots and tools. Again, keep hose ends off the ground. Do not overwater or overfertilize plants. Apply PCNB, etridiazole + thiophanate methyl or iprodione at planting.

Thielaviopsis root rot: Late in the season, roots turn black. Plants wilt. Longitudinal splits form at the stem base at and below soil line. Leaves yellow and fall. Caused by *Thielaviopsis basicola*. Use pasteurized soil and clean tools, and hang up hose ends. Apply thiophanate methyl or etridiazole thiophanate methyl.

COMMON NAME TRADE NAME

| | |
|------------------------------------|----------------------|
| bromine disinfectant | Agribrom |
| chlorothalonil | Exotherm Termil |
| copper sulfate | Phyton 27 |
| etridiazole | Truban, Terrazole |
| etridiazole + thiophanate methy | Banrot |
| iprodione | Chipco 26019 |
| metalaxyl | Subdue |
| PCNB | Terraclor |
| propamocarb | Banol |
| sodium hypochlorite | Clorox |
| thiophanage methyl | Clearys 3336, Domain |
| thiophanate methyl + mancozeb | Duosan, Zyban |
| triflumizole | Terraguard |
| vinclozolin | Curalan, Ornalin |

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BUYING QUALITY SOD

**John R. Hall III,
Professor and Extension Specialist
Virginia Tech**

Although all turfgrass sod may appear at first glance to be similar, consumers need to appreciate that there are often very important differences between apparently similar sods. These differences can have an affect on the potential of the grass to successfully establish and provide long term quality. Therefore, it is important that purchasers of sod know what questions to ask of the seller of sod in order to insure successful establishment and long term turf quality.

Questions to Consider Asking

1. What variety or varieties are in sod?

With more than 125 cultivars of Kentucky Bluegrass, 100 cultivars of Tall Fescue, 20 cultivars of Bermudagrass and Zoysiagrass, it is very important to know if the varieties in the sod have performed well in your area. In the United States, most land grant universities have National Turfgrass Evaluation Programs being conducted and make specific variety recommendations. Purchase varieties that are recommended by your land grant university or that have performed well in your region.

2. Are the varieties in the turf from certified seed or sprigs?

Certification insures genetic purity. It provides assurance that the product you are purchasing contains the varieties indicated. Quality sod growers will be willing to provide copies of the seed or sprig certification labels or documents upon request.

3. Is the sod certified?

Some states have sod certification programs that ensure genetic purity and certain levels of quality. Sod certification programs are particularly valuable in specification sod bidding and situations where the consumer is relatively uninformed and just wants to be sure he is getting a quality product.

4. If it is a mixture of grasses - what was the ratio of the planted mixture?

The consumer cannot know how to properly manage a turf unless they know what turfgrass they have purchased. Kentucky Bluegrass sod is sometimes grown with creeping red fescue or perennial ryegrass as a minor component. Bluegrass is also blended in small amounts with Tall Fescue. It is important to know the dominant grass in the mixture so an appropriate management program can be put in place. Tall fescue sod is normally planted with 80 to 90 percent Tall Fescue and 10 to 20 percent Kentucky Bluegrass on a weight basis. These ratios perform very well and are predominantly Tall Fescue at the time of harvest.

5. What is the actual grass content of the sod mixture?

Tall Fescue-Kentucky Bluegrass mixtures, although planted 90% Tall Fescue on a weight basis, are almost a 1:1 mixture on a seed count basis. Tall Fescue requires a much warmer soil than Kentucky Bluegrass to germinate. Therefore, 90-10 mixtures planted early in the summer or later in the spring on warmer soils, tend to contain significantly more Tall Fescue than 90-10 mixtures planted late in the fall or early in the spring when soil temperatures are cold. If you want Tall Fescue sod and you end up purchasing a sod that has a high Kentucky Bluegrass content, it may not perform as you would expect.

6. How old is the turfgrass sod?

Old sod is not necessarily bad sod. However, some turfs such as Kentucky Bluegrass, Bermudagrass and Zoysiagrass tend to produce thatch with age. Excessive thatch leads to crowns that are elevated in the thatch and predisposed to drought stress. If you are purchasing a sod with excessive thatch, it may be slower to root and you will want to include extensive aerification in the maintenance program to reinoculate the thatch with soil, increasing decomposition. Most sod is produced in 9 to 18 months without netting. Production time is generally shorter when netting is used.

7. Does the turfgrass sod have netting?

Some sod is grown with netting to increase sod strength and shorten the production time. This netting can be troublesome in recreational situations where cleats are commonly used, or in formal garden situations where heeled attire might be common. In most other situations it is no problem. Netted Tall Fescue sod is sometimes grown without Kentucky Bluegrass and if you manage turfgrass that is going to be heavily trafficked, you want to be sure it does have the Kentucky Bluegrass in it to ensure you have lateral healing potential provided by the Bluegrass.

8. At what depth is the turfgrass sod cut?

Sod is normally cut with 3/4 inch plus or minus 1/4 inch of soil attached. Thick sod roots slower, but obviously has a less frequent watering requirement than thin sod. Sod producers obviously don't want to send any more soil with sod than is necessary to ship a quality product. On a daily basis, they vary the thickness of the cut, based on age and quality of the sod, soil moisture, etc. Knowing the sod cutting depth will help the consumer determine adequate

irrigation frequency and how fast the sod will become rooted.

9. What type of soil is the turfgrass sod grown on?

Large differences between soil types of the sod and the soil it is laid on can lead to layering interfaces that promote rooting problems. Laying traditional soil or organic matter sod on sandy media has been noted to restrict rooting into the sandy soil. Most problems have occurred where heavier mineral soil sod has been placed on lighter sandy soils. It is best to try to purchase sod grown on soil that is reasonably close to the texture of the soil at the installation site. If significant textural differences exist between the sod and the installation site soil, it would be beneficial to plan several core aerifications and draggings as early as possible during the establishment phase to minimize the impact of layering upon rooting.

10. What will be the lag time between turfgrass sod harvest and delivery?

Significant delays between harvest and delivery waste stored food reserves in the grass plants in respiratory survival processes. Delay is particularly harmful during hot weather when respiration rates are maximum. In addition, it is known that higher mowing heights, higher nitrogen levels, thinner cut sod, and returned clippings all contribute to faster sod heating on the pallet. It is desirable to get sod installed within 8 hours of harvest. Sod that has been delayed, will have lower stored food reserves, less potential to develop an immediately aggressive root system and is likely to be predisposed to disease activity.

11. What was the mowing height at the turfgrass sod farm?

It is important to know what mowing height the sod was produced under as this would naturally be a stable mowing height to continue. Lowering the mowing height at the time of installation is not advised as this is a time when the grass actually needs maximum photosynthetic potential to compensate for the drawdown on stored food reserves associated with the shock of sod harvest and transport. Slightly higher mowing heights at installation are beneficial to establishment rooting.

rooting potential. It would be important in these instances to know how recently the material has been applied, and what residual effect might be expected. This would assist in setting up a reasonable mowing schedule.

12. Is the turfgrass sod rolled or folded on the pallet?

Rolled sod generally is hand carried from the pallet to the site of installation with less tearing than folded sod. If a lot of handling of the sod is going to be necessary at the installation site, you may prefer rolled sod. If the sod is mature and strong either type handles well.

13. Has the turfgrass sod been treated with a preemergence herbicide?

If you are getting the sod in the spring, you need to know if it needs an application for crabgrass or goosegrass control. If it has already received an application, an additional application may be harmful to root development. If it has not received an application of preemergence herbicide you may need to apply one, especially if the area to be planted has the potential for crabgrass or goosegrass between the sod pieces. Some preemergence herbicides tend to have a negative impact on sod rooting when applied at the time of sodding, therefore controlling breakthroughs with postemergence materials may be the best approach.

14. Has the turfgrass sod been treated with a growth regulator?

Some sod growers may be using growth regulators to reduce mowing and increase sod

15. When was the turfgrass sod last fertilized?

It is particularly important to know when the last nitrogen application was made to the sod, how much was applied and what was the source of nitrogen. If you are using cool season sod like Kentucky Bluegrass or Tall Fescue, and the sod just received soluble nitrogen at the farm, you may be providing too much nitrogen with establishment fertilization. A similar problem could occur with Bermudagrass being installed late in the season.

16. Has the turfgrass sod received any applications of iron or biostimulant in the last 30 days?

Researchers have demonstrated substantial root and shoot stimulation and significant increases in sod shear strength with applications of seaweed extractable cytokinins, iron, and "cytokinin like" fungicides to Kentucky Bluegrass. Sod installation rooting 4 weeks after harvest is increased with seaweed extracts, and some fungicides. These applications, if applied, would not need to be repeated. If they have not been applied, they could prove beneficial to sod rooting at establishment.

17. What pesticides have been applied in the last 30 days?

Have fungicides, broadleaf herbicides or insecticides been recently applied? Some systemic fungicides give up to 28 days control of common diseases like Brown Patch, Dollar Spot, etc. In addition, some insecticides have extended residual control potential. Therefore, reapplication before they are needed would be a waste of money. If broadleaf weeds are present in the sod it is possible they have already been treated and additional treatment could be detrimental. Some sod growers use materials that provide extended residual broadleaf weed control

and this could have an impact on the post establishment broadleaf herbicide spray program.

Be a prudent buyer of turfgrass sod. The above questions are particularly important to address if you want to maximize your chances for establishment success and long term turfgrass quality. All sod may look alike, but appreciate that there are differences that the eye alone cannot behold.

Reprinted from *TurfgrassFacts*, a newsletter from the Turf Resource Center and sponsored by the American Sod Producers Association.

PENNMULCH IS READY FOR RETAIL MARKETS

Russell Powell
Penn State Cooperative Extension

Last year a new type of mulch for turfgrass establishment was introduced to the green industry. Penmulch, developed by George Hamilton, Instructor of Turfgrass Science at Penn State University, is made from chopped newsprint, magazines and other paper, and can be used in place of traditional mulching materials.

The product addresses a long-standing need in the industry. "Mulching is needed in turfgrass seedbeds to hold moisture and protect seeds from temperature extremes," says Hamilton. "But traditional mulches present problems. Many professionals use hydromulch—a mixture of wood fiber or ground paper combined with fertilizer and seed, which is sprayed onto seedbeds. Hydromulching requires an expensive machine and a high-volume water source for filling the hydromulcher. The alternative is straw, which often contains weed seeds, tends to blow away, and is difficult to store and handle. In addition,

soil microorganisms to break down straw also deplete soil nitrogen."

Pennmulch is shaped into small green pellets that are easy to ship and store. "It looks exactly like rabbit food," Hamilton explains. "The pellets can be spread by hand or by some types of conventional spreaders owned by turfgrass professionals and landscapers. A starter fertilizer is combined with the product so that fertilizing and mulching is done in one step. When the pellets become wet, they expand so that a small amount covers a large area. Also, because the mulch is made entirely of paper, there's no danger of seedbeds being contaminated by weed seeds."

While Pennmulch currently is marketed only to commercial operations, Hamilton hopes to make it available to homeowners soon. "The product has a large marketing potential," says Hamilton. Pennmulch has great possibilities for retail because it can be sold in any size bag, it is shipped and stored much more easily than traditional mulches and the shelf life is unlimited.

Reprinted from *Green Business Reporter* Vol: 7 No: 3, July 1995.

FLOWER CARPET TO ROLL-OUT IN SUMMER OF '95

Flower Carpet USA, Inc. has announced that it will begin nationwide retail marketing of its patented ground cover rose, Flower Carpet in the U.S. in August of 1995. The rose, var. *Noatraum*, was developed over a twenty-five year period by German rose-breeder Werner Noack. It has been hailed by experts worldwide as it probably the most disease-resistant rose ever bred."

Among the numerous international awards it has won are three gold medals, including one in the All Deutschland Rose (ADR) trials in Germany in 1990. The ADR is considered the most demanding horticultural trial in the world. Roses in the test are required to go three years without any spraying at all. Flower Carpet received 18.3 points out of a possible 20, the highest rating for natural disease resistance ever given. It was the only rose out of 43 entered for 1990 to obtain ADR approval. All others failed even to qualify.

Other firsts and gold medals received by Flower Carpet include those awarded at international trials in Boskoop, Holland; St. Albans, England; The Hague, Holland; Gravenedge, England; Glasgow, Scotland; and Paris, France.

A Winner in Every Market Entered So Far

Dubbed the "Environmental or Eco Rose" because treatment against common rose blights such as black spot and mildew is unnecessary, Flower Carpet is an iridescent rose-pink ground cover rose suited to multiple consumer and commercial uses, in the landscape, garden, containers, hanging baskets and as a tree rose. Its vigorous growth, long flowering time and resistance to disease have made it a runaway hit with consumers in every market it has entered. Currently, it is available in Europe, Australia, New Zealand and South Africa. It is estimated

that more than 10 percent of the households in Australia and New Zealand have one or more Flower Carpet roses in their yards.

High Profile Marketing Support

Dan Davids, president of Flower Carpet USA, Inc., Gardena, California, says that savvy marketing, as much as the plant's performance, has made it a winner in foreign markets. "From the presentation at retail, to the tremendous amount of advertising and publicity support, the marketing of Flower Carpet has been first class in every market it's entered. The same sort of high impact launch is already underway for the U.S. Our industry has never seen this kind of consumer and trade support for the introduction of a single new plant variety."

Promotional efforts will include national advertising and public relations campaigns. Since May of this year, a select group of test growers comprised of nationally-prominent horticulturists and gardening journalists, have been evaluating the rose's performance under a wide variety of American conditions. Consumer advertising and publicity efforts will intensify as the launch date approaches.

Creative and financial force behind the marketing push is Anthony Tesselaar, managing director of Flower Carpet International, Melbourne, Australia. Tesselaar is zealous in his belief that fine quality horticultural products can benefit from the same type of consumer marketing support that sells packaged consumer products.

In the Pink

Flower Carpet will be marketed in an 8-inch pot, custom-designed in a rich pink that emphasizes the pink of Flower Carpet's blossoms. A booklet-style label featuring a detailed, easy-to-follow planting and care guide will be attached to each pot with a patented stake. The plant product

should retail for around \$16.00. Flower Carpet will not be sold as a traditional rose, per se, but as a container plant. Its particular qualities make it possible to plant Flower Carpet in spring, summer and fall, thus it is not restricted to the traditional selling season for roses.

"Flower Carpet will be introduced in August, with an eye toward the fall selling season," explains Anthony Tesselaar. "Fall can be a sluggish time in garden centers. Flower Carpet, which produces masses of pink flowers throughout the season, is a colorful, easy-to-grow plant that offers retail excitement. It can stimulate traffic and increase sales and cash flow during a selling season that otherwise features only mums, bulbs, holiday items and close-out lines."

All Flower Carpet stock sold in the U.S. will be entirely domestically grown. The Flower Carpet growers of America are Angelica Nurseries, Inc., Kennedyville, Maryland; Bailey Nurseries, Inc., St. Paul, Minnesota; Clinton Nurseries, Inc., Clinton, Connecticut; El Modeno Gardens, Inc., Irvine, California; Flowerwood Nursery, Inc., Loxely, Alabama; Midwest Groundcovers, St. Charles, Illinois; Monrovia Nursery Company, Azusa, California and Zelenka Nursery, Inc., Grand Haven, Michigan.

Easy-Care for Consumer, Commercial and Government Customers

According to Dan Davids, the real benefits of Flower Carpet will be seen in situations where an eye-catching show of color is desired, without the headaches of spraying, dusting, or careful pruning. He points out, "This is a rose for everyone, inexperienced 'yard' people, avid gardeners and commercial landscapers who need color and performance."

In addition to its consumer success, Flower Carpet in other countries has proved popular

among professional and government landscapers in a wide variety of commercial settings.

The rose flowers prolificly. Tesselaar cites a two-year old plant outside his office in Melbourne on which he counted more than 4,000 flowers over the season. In the U.S., the flowering season is from five to 10 months, depending on climate zone. No dead-heading is required. No fancy pruning is needed - a simple yearly clip with shears is suggested. It has proved to be highly resistant to mildew and is virtually free from black spot, even in problem areas.

Easy-Care, Environmentally Sound

"Flower Carpet is a remarkable plant by any standard," says Tesselaar. "As a rose, it's absolutely unbelievable." To illustrate his point Tesselaar explains that Flower Carpet:

- will flower in full sun or partial shade, is winter hardy in all American climate zones and is evergreen in warmer ones.
- is easy-care, requiring no spraying and no fancy pruning, just a rough cut with the hedge clippers each winter, is all that is necessary.
- is resistant to black-spot and mildew.
- can be grown in almost all soil types.

Tesselaar feels that plants bred to be disease-resistant are the wave of the future. "A plant like Flower Carpet is positioned to benefit from two strong consumer trends: the push towards more environmentally sound products, and the demand for no-fuss, easy-care garden plants.

Sophisticated marketing efforts will get this message to the public, ensuring a strong consumer demand from the first."

"Retailers need to get ready for consumers who will come asking for "that rose in the pink pot,"

says Dan Davids. "I think this is going to be huge."

For more information on Flower Carpet, contact Dan Davids, Flower Carpet, USA, Inc. at (310)329-8336.

Reprinted from *VNA Newsletter*, May/June 1995.

PESTICIDE NEWS

Insecticides:

MOCAP (ethoprop) - Phone-Poulenc - Voluntary cancellation of the last ethoprop products for use on domestic turf grass is due to reregistration costs. There are still products registered for golf courses.

ALLPRO DURSBAN 4E - Sureco - This key pesticide for nursery stock quarantine and certification treatments has been picked up as a part of the AllPro line after being dropped by DowElanco. The label has already been authorized by the U.S. Environmental Protection Agency for use and is also registered for the Worker Protection Standard.

DURSBAN PRO - DowElanco - The chlorpyrifos formulation is the new name of the Dursban product for uses not covered by the Worker Protection Standard such as turf and ornamental maintenance.

HOT PEPPER WAX - Wilder Agriculture Products - Natural, organic insecticide creates a transparent film barrier on plants that protects against mites, insects, fungi and virally transmitted diseases. Lasts 30 days and cause no phytotoxicity on vegetables, fruits, flowers, ornamentals or fruit and citrus trees. EPA approved use in all states except California.

MYCOTROL WP - Mycotech Corp. - A *Beauveria bassiana* strain (GHA) bio-control, controls aphids, fungus psyllids, mealybugs,

thrips and whiteflies on crops that include herbs, fruit and nut trees, ornamentals and turf.

CITATION (cyromazine) - Ciba-Geigy Corp. - An insect-growth regulator in a wettable-powder formulation, has amended its label. Can now be used to control dipterous leaf miners and fungus gnats in landscape and container-grown ornamentals and to control shore flies on greenhouse-grown ornamental crops and in interior landscapes.

OXAMYL - DuPont - All ornamental usages deleted from label effective 9/3/95.

ROTENONE - Agr. Evo. - Requested from EPA label deletion for all ag and ornamental uses due to reregistration costs effective 8/1/95.

ORTHENE T/O SPRAY (acephate) - Valent - Added usage on chrysanthemums and pansies.

NATURALIS-L (*Beauveria bassiana*) - Troy Chemical Co. - Being developed for usage on ornamentals to control aphids, thrips, whiteflies, caterpillars and many other insects.

Fungicides:

FUNGO-FLO (thiophanate-methyl) - Scotts - Added to their label usage in greenhouses.

RUBIGAN (fenarimol) - Dow Elanco - Added to their label usage on crabapples and hawthorne.

PHYTON 27 (copper sulfate complex) - Source Technology - Due to IR-4 research the label now includes usage on snapdragon, chrysanthemum, carnation, poinsettia, fuschia, gloxinia, impatiens, mugo pine, and rose periwinkle.

TERRACLOR (PCNB) - Uniroyal - Due to IR-4 research the label now includes usage on

anthurium, bleeding heart, pocketbook flower and cineraria.

TERRAGUARD (triflumizole) - Uniroyal - Due to IR-4 research the label now includes usage on artemesia, bee balm, buck violet, dogwood, carnation, dianthus, bleeding heart, Franklin tree, daylily, larkspur, Easter lily, Oriental lily, and lupine.

Herbicides:

FUSILADE II (fluazifop-p-butyl) - Zeneca Ag Products - Has received federal registration for use on nonbearing ornamentals and certain turfgrasses. Designed to control grassy weeds in many production and landscape situations. Available in quart containers.

RONSTAR (oxydiazon) - Rhone Poulenc - Due to IR-4 research the label now includes 54 new ornamental species.

Miscellaneous:

BONZI (paclobutrazol) - Uniroyal Chemical - EPA approved the reduction of the restricted entry interval for the growth regulator from 24 to 12 hours.

B-NINE (paclobutrazol) - Uniroyal - Due to IR-4 research the label has been expanded to include astilbe, columbine, clematis, larkspur, bleeding heart, candy tuft, blazing star and balloon flower.

SUMAGIC (uniconazole p) - Valent - Usage on woody landscape plants has been added to the label.

PROSHEAR (Nb-benzyladenine) - Abbott Laboratories - Voluntary cancellation of ProShear for use on white pines. Abbott plans to reregister same active ingredient without the offending inert by the end of the year.

RESEARCH BRIEFS

Propagation:

Subirrigation for Rooting Cuttings. A subirrigation method for rooting stem cuttings was compared to intermittent mist. Subirrigated cuttings of 'Franksred' red maple rooted far better (95% rooting with 321 mg root mass) than cuttings rooted under mist (33% rooting with 38 mg root mass). Subirrigated cuttings of Japanese tree lilac also rooted better than misted cuttings. In a second study, 'Franksred' red maple rooted better when supplied with 7.2 mol N/m³ as compared to unfertilized cuttings. H. Zhang and W.R. Graves.

(Previous article excerpted from *HortTechnology*, Vol. 5(3), July/Sept. 1995.)

Field Production:

The Effects of Uniconazole on Woody Plants. Growth regulators on woody plants have the potential to maintain desirable growth habits while reducing labor and costs involved with hand-pruning. The results of this study suggest that uniconazole could be used to reduce growth of *Pyracantha coccinea* 'Lalandei' while maintaining plant quality. Uniconazole treatments on *Photinia x fraseri* and *Ilex cornuta* 'Burfordii Nana', however resulted in deformed plants with questionable ornamental value. J. C. Cole and R.M. Frymire.

(Previous article excerpted from *American Nurseryman*, July 1, 1995.)

Container Production:

Copper Oxide Results from Nursery Trial. In a study conducted from May 1992 until April 1993 at Chelsea Nursery in Clifton, CO, copper oxide paint effectively eliminated circling roots and promoted fibrous root systems as compared

to untreated containers of *Populus angustifolia* (narrowleaf cottonwood), *Prunus virginiana* 'Schubert' ('Schubert chokecherry), *Quercus gambelii* (gambel oak) and *Salix alba* 'Tristis' ('Tristis' golden weeping willow). Including supplies and labor, painting containers with copper oxide added \$.026 per pot. As a result of this study, Chelsea Nursery is currently using copper-treated containers for production of all 1-gallon and 5-gallon woody stock. A.K. Stecher.

(Previous article excerpted from *American Nurseryman*, August 15, 1995).

High Root Zone Temperature (RZT) and N-source Affect Plant Growth. In studies with Helleri holly, results suggest that when N is supplied as urea, medium temperature can influence plant absorption of Mn through its direct effect on nitrification and subsequent effect on medium solution pH. Using fertilizers with an N source containing no urea and less than or equal to 50% NH₄-N for production of container-grown woody plants in nurseries in hot climates may reduce the incidence of chlorosis due to Mn deficiency or ammonium toxicity induced by high RZT. R.F. Walden and R.D. Wright.

High Temperature and Exposure Time Influence Nitrification. Southern U.S. nurseries producing plants that might be sensitive to elevated NH₄-N : NO₃-N ratios in the medium solution should adopt cultural practices that prevent maximum medium temperatures from exceeding 46C. Alternatively, using fertilizers containing less than or equal to 50% NH₄-N in midsummer is advised. R.F. Walden and R.D. Wright.

(Previous two articles excerpted from *HortScience*, Vol. 30(5), August 1995.)

Greenhouse Production:

Forcing Herbaceous Perennials for Early Spring Sales. In this study, hardy herbaceous perennials were forced as out-of-season flowering potted plants for late winter and early spring sales. Compact and uniform habit, attractive foliage, and abundant white flowers qualifies *Arabis sturii* for serious consideration as a flowering potted plant for late winter and early spring sales. Providing at least 7 weeks of cold (temperatures below 40 F) improved plant quality by synchronizing floral development over a condensed period. *Phlox x chatahoochee* produced an abundance of flowers when forced in the glasshouse. And, like *Armeria* and *Chrysogonum*, *Phlox x chatahoochee* is capable of flowering after only 4 weeks of cold. *Platycodon grandiflorus* 'Sentimental Blue' can produce flowers under natural daylengths, but requires at least 8 weeks of cold for the development of acceptable plant height and flower number. By providing about 4 to 6 weeks of cold, growers can force several crops of *Veronica x 'Sunny Border Blue'* to flower at intervals throughout the winter without reducing plant quality. Although they flower early with little cold treatment, *Armeria maritima* 'Alba' and *Chrysogonum virginianum* did not produce a long-lived or attractive enough flower display for sale as a forced potted plant. *Bergenia cordifolia* 'New Hybrid' did not flower at all and *Achillea x Lewisii* 'King Edward' and *Dianthus x Allwoodii* 'War Bonnet' flowered only sporadically. J. K. Iles and N.H. Agnew.

(Previous article excerpted from *HortTechnology* 5(3), July Sept. 1995.)

Floriculture:

Extending Vase-life of Statice. The vase life of *Limonium* 'Fantasia' was extended from 4-5 days in deionized water to 17 days when placed in a vase solution containing Physan (a quaternary ammonium disinfectant solution) at 200 microliters/liter and 20 g sucrose/liter. That

solution also promoted bud opening. Pulse treatment with 100g sucrose/liter in combination with Physan at 200 microliters/liter for 12 hours partially substituted for a continuous supply of sucrose. Including 30 mg gibberellic acid/liter in the vase solution was without benefit. M.DoI and M.S. Reid.

(Previous article excerpted from *HortScience*, Vol. 30(5), August 1995.)

Insect Control:

Bagworm Control. Bt and entomopathogenic nematode treatments decreased bagworm populations by about 70% when applied as a mid-season treatment (July) and by about 60% when applied as a late-season treatment (August) compared to Tempo II which reduced bagworm populations by 95% and 97 % respectively. Although Tempo II provided the best and most consistent control under all conditions, it carries a 12-hour restricted-entry interval. Many strains of Bt are eligible for a 4-hour restricted entry period and the EPA has exempted nematode-based products from WPS requirements. S.A.Gill.

(Previous article excerpted from *American Nurseryman*, July 1, 1995.)

Landscape:

Vegetation and Urban Park Crime. By means of in-depth interviews with park managers and law enforcement personnel, researchers at Virginia Tech found that vegetation is perceived as potential hiding places for attackers in urban parks and has been removed in a large-scale effort, thus changing the “nature “ of parks. These researchers advocate that complete vegetation removal is unnecessary to control crime in urban parks and have recommended a strategy for proper maintenance. Maintaining open-sight corridors without primary concealment, selective pruning around

surveillance source buildings, minimized concealment opportunities, and thin strips of vegetation rather than thick patches are effective in reducing crime opportunity without removing all park vegetation. For more information or copies of the report, contact the International Society of Arboriculture, P.O. Box GG,, Savoy, IL 61874. S.E. Michael and B. Hull.

(Previous article excerpted from *People-Plant Council News* 5(2), Summer 1995.)

The Effect of Hydrophilic Polymer on Survival of Transplanted Pine Seedlings. Pine seedlings planted in containers with a layer of hydrogel or in the field with hydrogel in the planting hole. Survival under drought stress was longer for the hydrogel-treated containers and there were no seedling losses in the field study for hydrogel-treated plants. Leaf water potential was higher for treated plants in both studies. These results indicate that under extreme and mild drought stress, hydrophilic polymers may reduce transpiration loss and improve seedling viability. This is significant for reforestation of arid environments. The impact of hydrogels will likely be restricted to early growth stages since root systems will grow out of the polymer zone. R. Save', M. Pery, O. Marfa', and L. Serrano.

(Previous article excerpted from *HortTechnology* 5(2), April/June, 1995.)

Screening for High pH Tolerance. Preliminary data indicate that ‘Autumn Flame’ red maple is more tolerant of high pH than ‘Red Sunset’ red maple and also more tolerant than ‘Autumn Blaze’ and ‘Indian Summer’ maple. The latter two are cultivars of *Acer x freemanii* (hybrids of *A. rubrum* and *A. saccharinum*). This is interesting because researchers thought hybrids of red and silver maple would be more tolerant of adverse soil conditions than red maple. H. Pellett.

(Previous article excerpted from *Landscape Plant News* 6(2), Summer, 1995.)

The Effect of Urban Microclimates on Sweet Gum Trees. Reduced irradiance in urban canyons has resulted in low-light stress. However, water stress--usually arising from high transpiration rates and rapid soil-water depletion--is less likely to be a problem for trees growing in urban canyons than for those growing in full-sun conditions. Soil conditions, however, are a very important consideration; water stress resulting from either confined or compacted soils is still a concern. R.K. Kjelgren and J.R. Clark.

(Previous article excerpted from *American Nurseryman*, August 15, 1995.)

New Releases:

‘Patapsco’ and Princess Anne’ Azaleas. ‘Patapsco’ azalea is valuable in the landscape because of its Indica type of vigorous growth and hardiness. ‘Princess Anne’ has a growth habit more typical of Kurume azaleas. Both bear large flowers in profusion and have proven hardiness in New Jersey, Maryland, and Alabama. ‘Patapsco’ is the hardier of the two introductions, adapted to fully exposed conditions in winter and summer in Maryland and Alabama. The single flowers of ‘Patapsco’ are imperial purple at the edge, becoming lighter toward the center with a red purple throat spot. ‘Princess Anne’ combines handsome, gardenia-like foliage with numerous, large, semidouble, hose-in-hose flowers with adaptability as a landscape plant and a potted plant for greenhouse flowering. Outdoors it requires a protected location. ‘Princess Anne’ has an uneven form in the landscape unless sheared to a compact growth. Flowers are an orangy-red. Requests for information and availability of propagation material should be directed to K.C.S., Dept. of Horticulture, Auburn Univ., AL 36849-4201. J.B. Shanks and K.C. Sanderson.

(Previous article excerpted from *HortScience*, Vol. 30(5), August 1995.)

Marketing:

Live-cut Leyland Cypress as Christmas Trees.

According to survey results from buyers of Leyland cypress Christmas trees, Leyland cypress has desirable characteristics as a Christmas tree. Respondents indicated that the Leyland cypress has an excellent shape and compares favorably with other Christmas tree species. In particular, Leyland cypress lasts longer, sheds fewer needles or twigs, and is not too dense. Leyland cypress was favored over spruce or pine by most respondents and most users considered buying a Leyland cypress as a Christmas tree next season. Even though respondents volunteered their participation and, therefore the results may not be representative of the general population, results indicate some interest in Leyland cypress as a Christmas tree. W.J. Florkowski and W.M. Lindstrom.

(Previous article excerpted from *HortTechnology* 5(2), April/June, 1995.)

Patterns of Landscape -Plant Consumption.

Data from surveys conducted from 1988 through 1992 indicated that 41.4 percent of those surveyed made no landscape-plant purchases, 16.6 percent spent from \$1 to \$50, 11.2 percent spent from \$51 to \$100, 21.1 percent spent from \$101 to \$500, 3.5 percent spent from \$501 to \$1,000, 2.8 percent spent from \$1,001 to \$5000 and .5 percent spend more than \$5000. Results show percentage of purchases at mass merchandisers had increased--from 28.8 in 1988 to 42.8 in 1992. Participants said the primary reason for purchasing plants at these retail outlets were location and low prices. However, purchase percentages at large and local garden centers appeared stable and, in some years, to be gaining sales consistent with the industry's increased sales. S.C. Turner.

(Previous article excerpted from *American Nurseryman*, August 15, 1995.)

AAN NEWS
Marianne McGloin
Executive Director, D.A.N.

The AAN reported that the Workers Compensation Bill, H.R. 1715 was approved by the House Educational And Economic Opportunities Committee less than one month after the bill was introduced. The bill reverses the U.S. Supreme Court's five-year old *Adams Fruit* decision which permits agricultural workers to sue employers for damages resulting from workplace injuries even when they were already covered by worker's compensation. As a result, agricultural employers were the only industry group not receiving protection from litigation enjoyed by all other employers. This reversal is another example of AAN's leadership and dedication to serving their membership.

Another bill was approved by the House of Representatives; H.R. 961 is a Clean Water Act amendments package. In this bill, the AAN worked diligently to define the term "agricultural lands" so it explicitly includes production nurseries. After a joint policy was issued by four federal agencies on wetlands that drove a wedge between wetlands and wetland standards on agricultural lands and nursery operations (because nursery crops are neither food nor fiber), the AAN pursued a legislative fix to clarify that nursery production is indeed part of agriculture. This bill is now in the Senate for consideration, but it might be vetoed by the President. I will continue to update everyone on the outcome of the bill.

The federal crop insurance policy for nurseries can now cover growers for as much as 75% of your container inventory on qualifying plants for the upcoming 1996 crop year which begins Oct. 1. The sign-up deadline is Sept. 30. If you grow nursery crops, you may be eligible to insure those crops against a single hazard or take advantage of several buy-up options and/or customized

coverage enhancements, such as frost/freeze, insects, excessive moisture, adverse weather conditions, hail, fire and plant diseases. For information on how growers may insure your crops, AAN urges you to contact Ken Eriksen or Jim Bilinski at the American Plantsman Insurance, 438 North Hough Street, Barrington, IL 60010. Tel: (708)842-0404 or Fax: (708) 382-5949.

By voice vote, the house subcommittee on immigration and claims reported out a bill (H.R. 1915) that proposes perhaps the most sweeping changes in immigration policy in three decades. Subsequently reintroduces as H.R. 2202, the bill lowers the annual caps in legal immigration, restricts immigrants' access to public benefits, seeks to deter illegal immigration and speed deportation of foreigners who enter the U.S. illegally. Fortunately, the subcommittee, chaired by Rep. Lamar Smith (R-TX), deleted a section of the bill that stood to authorize civil asset forfeiture for unlawful hiring of aliens. This section was dropped after the subcommittee recognized that it could be used to seize the home, business or farm of someone who had employed a single illegal alien, even if the violation was committed without the knowledge of the owner by his/her employee or agent. The subcommittee also adopted an amendment by Rep. Sonny Bono (R-CA) limiting the liability of employers for technical violations of I-9 verification paperwork requirements. Ten days would be allowed after notice of technical paperwork violations to make corrections. Employers engaging in pattern and practice violations would be excluded from the 10-day grace period. Surprisingly, the subcommittee adopted an amendment allowing the government to use "testers" to find immigration-related employment discrimination. a "tester" is an individual who applies for a job but has no intention of taking it and who is used by the government or third parties to test an employer's hiring practices to see if they are discriminatory.

This amendment was offered by Rep. Xavier Becerra (D-CA) in an effort to reduce potential incidents of discrimination during the hiring process. Opponents of the very controversial use of “testers” contend it is legalized entrapment. Meanwhile, AAN and the National Council of Agricultural Employers (on whose board of directors AAN sits) are still working to secure a temporary and seasonal worker program in the event that domestic labor shortages occur when immigration reform legislation passes Congress. Questions? Contact Ben Bolusky.

WELCOME NEW MEMBERS

Associate Members

Gold Star Nursery
443 McFarlan Road
Kennett Square, PA 19348
T. Scott Gallagher
(610)444-1140

Hollins & Company, Inc.
6207 Falls Road
Baltimore, MD 21209
Douglas Hollins
(410)828-0210

Holly Hill Farms
815 Pond Neck Road
Earlville, MD 21919
Robert Farrow
(410) 275-2805

Octoraro Wetland Nurseries, Inc.
P.O. Box 24
Oxford, PA 19363
Mark Gutshall
(610)932-2072

Select Soils
649 South Street
Kennett Square, PA 19348

Allan “Buzz” Ferver
John Pia
(610)268-0525

Just the Facts! This publication is for the grower who wants essential information quickly and from one source. It has a wonderful collection of lists, charts and maps that will help you quickly and easily find all the basic information and facts you need. This reference book should prove an invaluable tool for growers everywhere. By the editors of Garden Way Publishing, A Garden Way Publishing Book, Storey Communications, Inc. Schoolhouse Road, Pownal, Vermont, 0526. Cost is \$16.95.

The Hot 50 Farm Marketing Tips. To order your free copy, write to New World Publishing, 3085 Sheridan Street, Placerville, CA 95667. Please include \$1 for s/h.

Sunflower, Achillea, Celosia and Lily Fact Sheets. The University of Maryland Cooperative Extension Service has developed four new fact sheets on cut flower production, including sunflower, achillea, celosia and asiatic and oriented lily. Write to Stanton Gill, Maryland Cooperative Extension Service, 11975 Homewood Road, Ellicott City, MD 21042.

Ten Flower Stories for Children. Get to know flowers better by looking for them and perhaps even growing them. This 41-page book costs \$5. Contact: Jill Ann Williams, Sudden Elegance, Ltd., 3724 Cedar Drive, Baltimore, MD 21207; telephone: (410)944-5547.

Shrubs: The Glamour Plants. This mini-plant encyclopedia features numerous color photographs, general information on each shrub and separate articles on landscaping, pruning and container growing. Brooklyn Botanic Garden Publications by Bob Hyland and others. Cost \$6.95 + \$3.75 p/h. Phone/fax: (718)941-4044.

The Pruning of Trees, Shrubs and Conifers, by George E. Brown, Timber Press. This publication remains an important reference work for all nurserymen and landscapers who do any kind of pruning. Available for \$29.95 or call (503)227-2878; fax: (503)227-3070.

A Brief Look at Conifer Gardens. This publication is available from The American Conifer Society. Book discusses what conifers and garden conifers are; various sizes, forms and colors; and how to use and prune them. A list of conifer references, public gardens and arboreta having conifer collections, is also included. For more information, contact the ACS, 827 Brook St., Ann Arbor, MI 48103-3161, call (313)665-8171 or fax: (313)665-8720.

List of Names of Woody Plants, by H.J. Van de Laar and P.C. deJong, 1995, 5th revised edition Boskoop, NL., 426 pp. Dutch Guilders 35.00. **List of Names of Perennials**, by H.J. Van deLaar, G. Fortgens, M.H.A. Hoffman, and P.C. deJong, 1995, 3rd revised edition Boskoop, NL., 301 pp. Dutch Guilders 35.00. Research Station for Nursery Stock, P.O. Box 118, NL-2770 AC Boskoop, Netherlands. After four years of preparation, the Boskoop Research Station for Nursery Stock in The Netherlands has just released the fifth and third editions respectively of the above publications.

September 19 - Perspectives On The Landscape: Trees, a day-long symposium on the present and future use of trees in the landscape; Cold Spring Harbor Laboratory, Long Island, NY. For more information contact Susan Cooper at Cold Spring Harbor Laboratory, (516)367-8455.

September 19, 21 - Pruning and Landscape Maintenance, Ornamental Short Course Series, Newark, DE. Contact Susan Barton, (302)831-2531.

September 20 - Plastic Pesticide Container Disposal, Middletown DelDOT Yard, 9am to 2pm. Bring your plastic pesticide containers to be chipped and recycled. For directions, contact DDA or your county Cooperative Extension office.

September 20 - 1995 Landscape Expo. Landscape Contractors Association. MD-DC-VA. Howard County Fairgrounds, West Friendship, MD. Call:(301)948-0810 or Fax:(301)990-9771.

September 21 - Plastic Pesticide Container Disposal, Magnolia DelDOT Yard, 9am to 2pm. Bring your plastic pesticide containers to be chipped and recycled. For directions, contact DDA or your county Cooperative Extension office.

September 21, 22 - Digging Deeper for Better Solutions seminar. Tree Card Educators. Turf Valley Hotel and Country Club, Ellicott City, MD. Call or Fax:(503)254-0482.

September 22 - Plastic Pesticide Container Disposal, Sussex Conservation District Equipment Yard, 9am to 2pm. Bring your plastic pesticide containers to be chipped and recycled. For directions, contact DDA or your county Cooperative Extension office.

September 25, 27, October 2, 4, 9, 11 - Business Management, Ornamental Short Course Series, Newark, DE. Contact Susan Barton, (302)831-2531.

October 2, 9, 14, 16 - Propagating Perennials, Dale Hendricks at Longwood Gardens. Contact (610)388-1000, Ext. 516.

October 2-6 - Tree Climbing School, Penn State University, Lima Campus, Delaware County, PA. A five

day intensive class to train students in the introductory principles of tree maintenance. Contact Rick Johnson, Delaware County Extension Agent, 340 N. Middletown Road, #19, Media, PA 19063-5505, Tel: (610)565-9070.

October 3 - Plant Production, Evening Seminars for Professional Growers. Improving your soil through amendments! Tour Tulpehocken Nursery, tour soil amendment demonstration, dinner, panel discussion, plus core credits. Tulpehocken Nursery, Reading, PA (Berks County). Fee for seminar is \$20.00. Contact: Nursery Seminars, Montgomery County Coop. Ext., 1015 Route 113, Suite H, Colledgeville, PA 19426-1179.(610)489-4315.

October 9-13 - Tree Climbing School, PennState Delaware County Campus. Contact Rick Johnson, (610)565-9070.

October 11-13 - Annual Conference. Composting Council. USDA Agricultural Research Service and Compost Science & Utilization. USDA facility, Beltsville, MD. Call:(703)739-2401 or fax: (703)739-2407.

October 17 - Perennials Conference, Swarthmore College. Contact Pennsylvania Horticulture Society, (215)625-8250.

October 18 - Deer Damage Management in NJ: Alternatives For Landscape Professionals; Haggerty Education Center, Morristown, NJ.

October 19 - Nursery Bus Tour. Contact Dave Suchanic, (610)489-4315.

October 20 - Native Plants in the Garden Landscape. Rick Darke at Longwood Gardens. Contact (610)388-1000, Ext. 516.

October 25 - Delaware Certified Nursery Professional Exam. Dept. of Ag., Dover, DE. Contact Marianne McGloin (302)677-1895.

October 25-27 - Fifth Annual Virginia Urban Forest Conference, Holiday Inn Waterfront, Portsmouth, Virginia. Planning and Empowerment for Sustainable Urban Forest Ecosystems, sponsored by Virginia Urban Forest Council. For more information, Call:(804)842-2603.

October 25-29 - Growers' School, sponsored by the Association of Specialty Cut Flower Growers, Inc. One-day Growers' School in conjunction with the ASCFG National Conference, Omni Inner Harbor Hotel in Baltimore, MD. Contact the ASCFG at P.O. Box 268, Oberlin, OH, 44074, Call:(216)774-2887, Fax:(216)774-2435.

October 28 - Wildlife Management Workshop, Bill Haldeman at Longwood Gardens. Call: (610)388-1000, Ext. 516.

November 2-3 - Issues, Policy and Controversy, ACPA Fall Conference. Vista Hotel, 1400 M Street, NW, Washington, DC., Tel:(202)429-1700.

November 2-5 - International Plant Propagators' Society 45th Annual Meeting of the Eastern Region, Hartford, Connecticut. Theme: "Back To Our Roots: A Tribute to Jim Wells". Registration packets will be sent to members in late August. Others will be sent on request. IPPS Eastern Region, 26 Woodland Road, Storrs, CT 06268. Tel:(203) 429-6818, Fax:203-429-6665 for further information.

November 8 - Delmarva Greenhouse Growers Meeting. Delmarva Convention Center, DelMar. Contact Marc Teffeau (410)827-8056.

November 9 - DE/PA Garden Center Bus Tour, Three Maryland Garden Centers to view Christmas displays. Contact Susan Barton, 831-2531.

November 10 - Pruning Workshop, Ed Broadbent at Longwood Gardens. Contact (610)388-1000, Ext. 516.

November 13-17 - Wetland Delineations, Soils, & Hydrology, Winter Wetland Delineation, Environmental Concern Inc., St. Michaels MD. 8am-5pm, cost \$775. Instructors: Mark Kraus and Sue McIninch. For more information, Tel:(410)745-9620, Fax:(410)745-3517.

November 15 - Delaware Turfgrass Conference, Hockessin Memorial Hall. Contact Marianne McGloin, (302)677-1895.

December 1 - Native Plants in the Garden Landscape, Rick Darke at Longwood Gardens. Contact (610)388-1000, Ext. 516.

December 14 - DE/MD Turf and Ornamentals Conference. Sheraton Inn, Dover. Contact Susan Barton (302) 831-2531.

January 4-6, 1996 - Winter Mants, Baltimore Convention Center, MD. Contact: Carville Akehurst, Tel:(410)256-1799, Fax:(410)256-2208.

January 17, 18 - Delaware Horticulture Industry Expo, Sheraton Inn, Dover. Contact Marianne McGloin, (302)677-1895.

February 1-4, 1996 - WNGA/NLA/GCA Management
Clinic, Louisville, KY. Contact: AAN.

