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ASSOCIATION NEWS
Marianne McGloin
Executive Director, DAN

Happy holidays to everyone! 1997 is winding to a close and it is a very busy season for everyone. The new year will also mark the DAN's 25th anniversary. We will begin celebrating this milestone at the 1998 Delaware Horticulture Industry Expo. This should be an extra incentive to attend the expo. The DAN has planned an exciting three-day event. The first day targets growers; the second day has both the management and employee enrichment sessions. The management sessions focus is on improving your business practices and the third day sessions are divided into landscape, retail, greenhouse and environmental sessions. The first mailing is completed. The second mailing will be sent before Christmas. Please call if you did not receive a registration brochure.

The Certified Nursery Professional exam took place on October 21, at the Department of Agriculture, Dover, DE. Congratulations to David DeShong and Mark Hoffman from Country side Nurseries who are now CNPs. Congratulations to Robert Boyle for passing the Landscape Design Specialty exam. The next exam dates for 1998 are March 10 and October 20. It is never too early to prepare for the exam. We now have 59 CNP's in the state. Help us reach 100! Manuals are available at the DAN office and short courses are provided by Delaware Cooperative Extension. Please call Marianne McGloin at the DAN office (677-1895) or Sue Barton (831-1375) at the University of Delaware for more information. The manuals have just been updated and we hope to have the new version available for sale at the Horticulture Industry Expo. Anyone with an existing manual can upgrade to a new manual for a modest fee.

The DAN received six applications for the Landscape Contest. Congratulations to Lord's Landscaping in Millville for an outstanding landscape project. Lord's was the winner of the \$10,000 or above category. Lord's landscaping will receive their award on January 15 at the annual meeting.

One legislative note, the ANLA has been working diligently to fight a tax rule implemented by the IRS to tax nursery growers on inventory and production costs. With the help of the ANLA, the DAN and other nursery associations, the IRS responded with the retraction on the tax rule and gave the industry what we wanted. Thanks to everyone on the Board for participating.

The Turfgrass workshop took place on November 11 at the New Castle County Extension Office. The format was different from our traditional educational meetings. Two cases were presented and discussed. Participants provided solutions and learned about lawn establishment and maintenance in the process. It was a great success. Big thanks to Susan Barton for coordinating and providing speakers for this workshop.

Time does truly fly by. Our President, Craig Rice, will step down in January. Naomi McCafferty is our President-elect. Thank you Craig for supporting the Association during your two-year tenure.

Quote for the Quarter

A holiday gives one a chance to look backward and forward, to rest oneself by an inner compass.

May Sarton, A Seventy (Norton)

WELCOME NEW MEMBERS

Active Members

Phillips Lawn & Garden Care, Inc.
P.O. Box 4541
Greenville, DE 19807
(302) 737-7347

Mast Lawn Service
Rt 3, Box 222
Harrington, DE 19952
Earl Mast
(302) 398-3490

Associate Members

Valent U.S.A. Corporation
P.O. Box 385
Camden, DE 19934
(302) 697-8877

Congratulations CNPs

David DeShong
Countryside Nurseries
Retail Specialist
Landscape Specialist

Mark Hoffman
Countryside Nurseries
Retail Specialist

Robert Boyle
City of Dover
Landscape Design Specialist

U OF D NEWS

Susan Barton
Extension Specialist

I am excited about our short course line up for 1998. When you read this, I'm you'll be excited too. We start in late January with Horticulture on the World Wide Web (January 27, 1-4 PM at Newark Hall). This course will help you learn how to use the web to enhance your business or work environment.

The next short course is offered in mid-February. You will not want to miss Improving the Employee/Customer Interface. Clyde Vadner for the nationally-known firm of Kraft Associates will help your employees learn how to interact with each customer. Knowledgeable, courteous employees are one of the top three reasons cited for why customers choose to use a particular business. And the single most important factor causing a customer to stop using a business is a bad experience with an employee. Clyde Vadner has worked for many years with a highly respected landscape firm in our area, so he knows this business. He is also speaking at the ANLA Management Clinic in Louisville. You can hear how at the New Castle County Extension Office in Newark on February 13.

On February 18, 19 and 20 we will work on Promoting Sales in the Garden Center with effective displays, informative signs and strategies for maintaining healthy plants in a retail environment. This workshop will be offered at the New Castle Country Extension Office in Newark.

In Georgetown at the Research and Extension Center we will offer Diagnosis of Insects and Weeds in the Landscape on March 10 and 12.

Turf Management, a popular short course that cover turfgrass ID, establishment and

maintenance practices as well as insect and disease diagnosis and control, will be offered on March 18 in the Kent County Extension Office.

Diagnosis & Control of Insects on Woody Ornamental Plants will be offered in New Castle County at the Extension Office on March 24 and 26.

Irrigation system design and installation will be covered in a short course that combines lecture with a field trip to an actual system facilitating hands-on practice. This short course will depart from the New Castle County Extension Office on March 31 and April 2.

Integrated Landscape Management will be offered on April 8 at the University of Delaware Botanic Gardens (UDBG). We will use the UDBG to address the landscape approach to reducing maintenance and pest problems.

Our spring offering will wrap up with the first of three pest walks scheduled for 1998. This first pest walk will be held at the UDBG on June 2. The other two walks will be held in August and September and be held at Delaware State University and Winterthur Museum and Gardens, respectively.

A second session of short courses will begin in August. It will include as requested, Basic Landscape Management for Spanish-speaking Personnel (August 19) so mark your calendars!

As you can see, we are providing a host of educational opportunities. The cost is reasonable. Please take advantage of these courses to educate yourself and your employees. Short course flyers will be mailed in early January. If you have any questions or don't receive a flyer, call Susan Barton at (302) 831-1375.

**DE DEPT. OF AGRICULTURE
PLANT INDUSTRIES NEWS
Lynn Harrison, Sr. Entomologist**

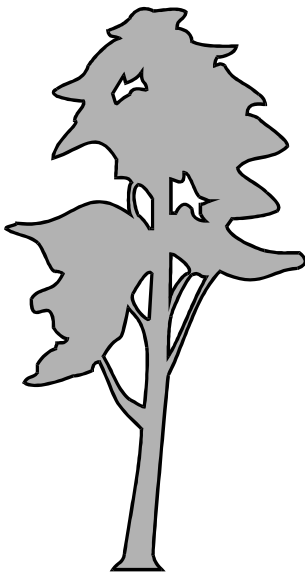
The Department of Agriculture has recently received a "heads up" bulletin from USDA-APHIS (Animal Plant Health Inspection Service). A shipment of chrysanthemums showed up at a grocery store chain in Washington state which were infected with chrysanthemum white rust. A federal inspector was able to trace the plants to a greenhouse business in Oregon, and the original cuttings to a grower in Florida. In order to make this kind of plant search possible, it is necessary for nursery stock businesses to list, or declare, the sources of their plant purchases, as well as, kind of plant material and whom it's purchased from. Each spring a Nursery Industry License renewal application is mailed to your place of business. By this time of year, you should have a good idea of what inventory you plan to carry and who you plan to purchase your inventory from. You look at the application and think, "I don't have time for this now." This application contains essential information that helps us do our jobs, which is to make your business, better.

In the case of the chrysanthemum white rust, had the grocery stores paid closer attention to the plant material they would have seen that something didn't look quite right. The inventory on hand was consequently condemned and the stores lost whatever money they had invested. Actually, this entire loss could have been avoided. If a grocery store representative had contacted their local state or federal plant regulatory agency before unloading an inspector would have shown up, inspected the material, found it infested with an unacceptable plant pest and given the grocery store chain permission to refuse the shipment. The store chain would not have been responsible for paying for the shipment. If you suspect a potentially serious pest problem is attacking a shipment of nursery

stock sitting on a truck in your lot, and you are unsure whether or not you should unload, call your local state or federal agriculture regulatory agency for an opinion. After all, it's your money, too.

Retail inspections are ongoing due to the seasonal changeover of the plant material. You may receive a visit from the nursery inspector at any time of the year, or several times a year as your inventory changes. We have recently mailed out the 1997-98 inspection certificates and Nursery Industry Licenses. We are also in the process of changing our nursery databases to a new system. If you have not received your new certificate or license, please contact us. You can check the expiration date near the bottom of your license or certificate. This date should read "valid until October 31, 1998."

If you need additional information, you may contact the Department of Agriculture, Plant Industries Section at 1(800)282-8685 (Delaware only), (302)739-4811, by fax at (302)697-6287, or E-mail at lynn@smtp.dda.state.de.



INCREASING MARKET SHARE IN THE LANDSCAPE INDUSTRY

Melvin P. Garber
University of Georgia

The information in this study (type of suppliers used by landscape installers) was gathered to assist nursery growers in developing marketing plans for the landscape industry.

Georgia landscape installation firms were recently asked to identify where they purchased plant material (in-state or out-of-state) and from what type of operation (grower, re-wholesaler, garden center, or broker). Approximately 70% of the value of plant material purchased was from Georgia suppliers. Since these in-state suppliers include re-wholesalers, which purchase a substantial amount of their plant material out-of-state, the out-of-state purchases are something greater than 30% (I would estimate 40%).

Landscape firms purchased the largest percentage of product direct from growers. Large firms purchased a higher percentage of their plants (69.4%) direct from growers than did small (49.4%) or medium (46.8%) size firms. Small (35.5%) and medium (36.0%) firms purchased a higher percentage of their plants from re-wholesalers than did large (25.4%) firms. The major re-wholesalers in Georgia are located in the metropolitan Atlanta area and tend to have lower minimum purchase requirements, which may have accounted for the higher proportion of purchases by small firms. They also allow for local pick-up and delivery on short notice. Re-wholesale prices are generally higher than from the grower which may account for the lower proportion of business from large firms that have greater opportunity to leverage their large volume purchases.

Based on this study, if you are a grower

supplying plants to the Georgia landscape market and you do not use re-wholesalers, you are missing about 25% of the landscape market. the percentage of material supplied by re-wholesalers will likely vary by metropolitan area, but this study suggests that if you supplying an area with several re-wholesalers then you should definitely consider these firms as a mechanism to achieve greater market share. Re-wholesalers are a particularly efficient way to serve the large number of small firms and to manage credit risks associated with this group.

Growers and re-wholesalers accounted for most of the plant material purchased by small (84.9%), medium (82.8%) and large (94.8%) firms. Small (5.0%) and medium (13.0%) firms utilized brokers more than did large firms (3.4%), but the total dollar value going to this segment was relatively small (5%). Garden centers supplied more plant material to small firms (9.3%), in terms of dollar value, than to medium (3.0%) or large (1.6%) firms. About two-thirds of the small firms and about half of medium and large firms purchased some material from garden centers. The large number of firms that purchased plant material from garden centers was surprising since garden centers are associated with higher retail prices. This could be an indication that some garden centers are also re-wholesaling or, provide convenience and specialty items where price is not as important.

Landscape installers were also asked to identify opportunities for plant producers to help the landscape installation industry supply better goods and services. the two most frequently mentioned opportunities, by all size firms, were: (1) *improved size and quality standards for plant material (30.7%)* and (2) *greater awareness of plants being specified by landscape architects so that plants in demand will be available (25.3%)*.

This suggests that growers should make a special effort to ensure uniformity of plants within a shipment and hopefully between shipments. The second opportunity supports the contention of my previous article that growers should be communicating with landscape architects - finding out what they plan to specify and influencing what they should specify.

Other areas of general agreement across size of landscape installation firms, were the need for monthly availability lists and photos of plants (small, 9.1%; medium, 16.7%; large, 11.0%) and the need for landscape size/landscape hardy plants (small, 9.1%; medium, 4.2%; large, 5.6%).

The large firms rated improved shipping and handling of B & B trees (16.7%) and responsiveness to request for quotes (16.7%) as top priorities. The medium (4.2%) and large (5.6%) firms were more interested in growers providing a warranty with plants than were small firms (0.0%). This may be related to the volume of plant material shipped and the dollar value at risk.

This information on source of plant material should aid you in decisions on how to increase market share in the landscape industry. Utilizing re-wholesalers can increase your access to the total market, and in particular, the large number of small firms that are difficult to serve from a remote locations.

The trade-offs for your generally lower prices are reduced credit risk and lower sales costs. The grower opportunities provide specific suggestions for improvement of products and services to the landscape industry. You might consider a self-assessment of your business with emphasis on sales and marketing communications.

This research was supported by the Horticultural

FUNGUS GNAT CONTROL IN PROPAGATION GREENHOUSES

**Stanton Gill
University of Maryland**

Nurserymen who start woody plants and herbaceous plant materials in greenhouses must often deal with root pests that damage roots of young plants and can introduce root diseases into nursery plants. These root pests are called dark winged fungus gnats. The adults do not damage the plants but females lay eggs on the surface of the soil and the larvae tunnel into root systems and stems (in the case of herbaceous plants) and cause stunting or death of the plants. The following information will help growers understand and combat this pest.

Insects attacking roots Detection and identification

- Fungus gnat larvae cause plant damage by feeding on root hairs and tunneling into stems of plants. Crops are often damaged both while under misting systems and when growing in constantly wet soils.
- Recent research has linked fungus gnat activity in greenhouses with the transmission of Pythium, Verticillium, Botrytis, Thielaviopsis, and Fusarium.
- Adult fungus gnats are dark-bodied, slender, long-legged mosquito-like insects in the order Diptera.
- Adult fungus gnats are generally captured on yellow sticky cards.
- Fungus gnat is a general term used to identify flies in three families: Sciaridae, Phoridae and Mycetophilidae.
- In production greenhouses, most fungus gnats found damaging plant material are in

the family Sciaridae.

- Two common species found damaging plants in greenhouses are *Bradysia corophilia* and *Bradysia impatiens*.
- Adult sciarid fungus gnats are less than one-eighth inch long. The antennae are long and beaded.
- As a member of the order Diptera, fungus gnats have only one pair of wings. A distinctive characteristic to look for on the wings of fungus gnats is Y-patterned wing veins.
- The insect most often misidentified as a fungus gnat is the shore fly. The shore fly has a larger, more robust body. The antennae of shore fly are short, and thread-like, not long and beaded like adult fungus gnats.
- The wings of shore fly are distinct with dark coloration and five clear spots on each wing (see slide).
- Shore fly are algae eaters and do not feed on plant roots or stems.
- The larvae of fungus gnats are clear and worm-like in shape. The head capsule is black.
- The larvae of shore flies are maggot-like and wedge shaped. Fungus gnats have mandibles for gnawing and tunneling in plants. Shore flies do not have visible mandibles.

Lifecycle and conditions for fungus gnat populations

- Adult fungus gnats lay eggs on soil surfaces. They favor soil that remains continuously

wet. In greenhouses, eggs are laid on the soil surface of pots and on soil under the greenhouse benches. Female fungus gnats lay between 100-200 eggs.

- Fungus gnat larvae feed in the upper inches of the soil mix and at the bottom of the pot where moisture level is high.
- Fungus gnats pupate in the soil. The adults mate soon after emergence and a female can begin depositing eggs within 2 days after emergence.
- Generations can be continuous and overlapping in the greenhouse. This has made most control strategies difficult.
- Development time at 70 - 75 F is 20 - 29 days.

Management options

- *Bacillus thuringiensis* var *israelensis*, Bti, is a highly effective spore-forming bacterium that produces a crystalline protein toxin that kills fungus gnat larvae.
- Bti formulations for greenhouse, sold under the trade name Gnatrol, are applied as soil drenches. The material can be applied at rates as low as 16 ounces to high rates of 128 ounces per 100 gallons of water. Higher rates are used on high fungus gnat population.
- Entomopathogenic nematodes are microscopic, colorless roundworms. Three species of entomopathogenic nematodes, *Steinernema carpocapsae*, *Steinernema feltiae*, and *Heterorhabditis bacteriospora*, have been used in controlling the larvae of fungus gnats.
- Field research by the University of Maryland

Cooperative Extension has shown that *Steinernema feltiae* is one of the most effective entomopathogenic nematodes available. Several greenhouse supply companies now sell these nematodes under various brand names. **You may contact me for an expanded list of suppliers of these beneficial nematodes.**

- The nematodes are applied as a drench to the plants on the greenhouse bench and to the soil below the bench.
- Insect growth regulators (IGRs) are a relatively new type of chemical used for insect control. IGRs are specific insecticides that only affect only animals that molt. The chemical compounds in IGRs interfere with immature insect growth, development, or molting processes.
- Kinoprene (Enstar II), and Dimilin are two growth regulators labeled for fungus gnat larvae control and are applied as a soilless media drench.
- Azadirachtin (Nemazood and Azatin) derived from the neem tree is a natural IGR that has labeling for use in greenhouses for control of fungus gnats. It is applied to the media as drench.
- Chlorpyrifos (Dursgard), and Diazinon (Knox-out) are chemical pesticides labeled for control of fungus gnat larvae.

Reprinted from Free State Nursery News, August 199.

LAWN CARE EQUIPMENT OPERATORS ENCOURAGED TO PRESERVE THEIR HEARING

**Peggy Leneis
National Organization for Hearing in
Research**

As landscape contractors wielding power lawn mowers, trimmers and leafblowers transform winters untidy yards into summers manicured lawns and flower beds, they may be unwittingly harming their hearing. Persistent equipment noise may be causing invisible, painless and irreversible damage to their ears.

If landscape contractors are not protecting their ears with earplugs or earmuffs, they are routinely exposing their ears to sounds above 85 decibels the level that experts agree may threaten hearing over a period of time. (The decibel scale runs from the faintest sound the human ear can detect (0 dB) to over 180 dB, rocket launch-pad noise level.) While susceptibility to damage from noise varies among individuals, the American Academy of Otolaryngology-Head and Neck Surgery (MO-HNS points out that, the longer you are exposed to a loud noise, the more damaging it may be. Also, the closer you are to the source of intense noise, the more damaging it may be.

The ear structures responsible for our ability to perceive sound are located deep within the ear, hidden from sight, in the spiral-shaped cochlea. They are microscopic projections resembling minuscule hairs and are called inner ear hair cells. The hair cells translate sound into electrical signals that the brain interprets. Unlike most physical injuries, noise damage to the inner ear hair cells does not cause discomfort, the body's usual way of bringing attention to a destructive activity.

As explained in the Summary of the NIH Consensus Development conference on Noise

and Hearing Loss, sponsored in 1990 in part by the National Institute on Deafness and Other Communication disorders (NIDCD), an individual affected by noise may experience what is termed as temporary threshold shift. This occurs when the frequency of sound he or she is able to detect becomes slightly lower; or the individual may experience an episode of tinnitus (ringing in the ears) or perceive sounds as muffled. If the duration of the exposure to loud sound is brief, the hair cells may recover.

However, if the exposure to hazardous noise is continual, the hair cells will gradually wither and die from the assault. Hair cells do not spontaneously regenerate and there is currently no medical or surgical procedure available that restores hair cell function. The hearing loss is permanent.

Noise induced hearing loss usually begins in the higher frequencies, which are not as important in the discrimination of speech; thus it may go undetected at first. As repeated noise exposure destroys more inner ear hair cells, however additional lower frequencies are affected and hearing difficulties become more apparent.

The American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) explains that hearing protection devices earplugs and earmuff decrease the intensity of sounds reaching the eardrum. Properly used; earplugs and muffs are approximately equal in sound reduction, lessening the level of noise reaching the inner ear by 15 to 30 decibels.

Earplugs are small inserts that fit into the outer ear canal. to be effective, they must block the ear canal with an airtight seal. A variety of sizes and shapes are available; they can also be custom-made. Dirty, poorly fitting or worn-out earplugs lose their effectiveness and may irritate the ear. Earmuffs fit over the entire outer ear and block the entire circumference of the ear

canal, forming an airtight seal. An adjustable band keeps them in place. They cannot be sealed properly around eyeglasses or long hair.

The best protection is achieved by wearing both earplugs and earmuffs. Together, an additional 10 to 15 decibels of protection is attained. AAO-HNS recommends combined use of earplugs and earmuffs when noise exceeds 104dB.

For landscape contractors who are regularly subjected to noisy equipment on-the-job, hearing protection devices can mean the difference between hearing health and hearing impairment.

This Safetyscapes was provided by Peggy Leneis of the National Organization for Hearing in Research, Narbeth, PA. If you have a safety experience you would like to share, please contact: Bob Drury, Safety committee Liaison, Associated Landscape Contractors of America, 150 Widen Street, Suite 270, Herndon, VA 20170; (703)736-9666 or (800)395-2522. Fax: (703)736-9668; E-mail: bobdrury@alca.org

NEW WAY TO PLANT TREES
Gary Moll and Phillip Rodbell
American Forestry Association

Major changes are needed in both the way we think about trees and the way we plant them. The American Forestry Association, in cooperation with the National Urban Forest Council, has drawn up new guidelines for how to plant a tree.

- **Prepare wide planting area for trees**

Plant trees so roots have a chance to grow into the surrounding soil and produce healthy, vigorous branches, foliage, and roots. Instead of a planting hole, make a large planting area that is wide, but not deep, with soil that is loose and accommodating for root growth. The larger the area, the better.

After selecting a suitable location, mark out a planting area five times the diameter of the planting ball. Use a rototiller or a shovel to loosen and mix the soil in this entire area to a depth of about 12 inches. In the center of the prepared area, dig a shallow hole to set the tree. The hole should allow the root ball to sit on solid ground rather than loose soil. Once the ball is set in the hole, its upper surface should be level with the existing soil. After the tree is properly situated, cut and remove the rope or wires holding the burlap in place and securing any part of the tree. Position the tree so it is perpendicular to the ground and the main stem is growing straight up.

- **Pack soil gently around new planting**

Backfill around the root area, and gently pack the soil to prevent major air packets, but it is a mistake to pack the soil too hard. Water can be used instead of your foot to help the soil settle and prevent overpacking. Rake the soil even over the entire area, and cover it with 2 to 4

inches of mulch bark, wood chips, old sawdust, pine needles, leafmold, or the like. Some mulches decompose quickly and will have to be replenished once or twice a year. Maintaining the mulch layer carefully will improve tree growth substantially.

Some planting recommendations suggest mounding the soil at the outer edge of the planting ring to form a water-holding berm. The berm will help hold water, but it may also encourage the root growth to remain within the berm, close to the tree. The American Forestry Association does not recommend berms; mulch should hold the water adequately. An alternative if a berm is needed, is to place it 6 inches beyond the planting ring to encourage wider root growth.

It is best not to stake the tree, but if wind is a problem or the tree starts to lean, support it with a flexible stake so the trunk will sway in the wind. Movement is necessary for building the trunk's strength. Remove the stake and wire after a year since leaving wire or string around the tree can kill it.

- **Do not use protective tape**

Do not wrap the trunk with protective tape. It will slow the tree's ability to adapt to the site and may provide a cozy home for insects. The tape is often held in place with a thin thread at the top and bottom, which will strangle a tree just as wire will. Tree bark needs air and sunlight in order to build a healthy, protective sheath.

It is estimated that young trees can grow twice as fast when planted correctly and will live at least twice as long as trees improperly set out. Digging a hole in dense, compacted soil and filling the hole with peat moss and other soil amendments is like creating a pot for the tree that soon becomes a coffin. The tree does fine

until the roots reach the original soil, and the outward growth stops. Instead of spreading into the yard, the roots encircle the planting pit. The pot soon fills with roots. The crown continues to grow, but the roots do not. Once the tree becomes root-bound, its ability to maintain itself during a drought or flood is limited leading to a decline that often ends in tree death.

Reprinted from the VNA Newsletter, July/Aug, 1997. Originally printed in "The Best Way to Plant Trees," by Gary Moll and Phillip Rodbell.

TREE ROOTS **Alan R. McDaniel**

The plant root system is often unseen and unappreciated. It is extremely difficult to study and entire root system, particularly in the case of trees. Heavy, woody roots, at diameters up to 12 inches, may be revealed by washing away the soil. However, trees also produce a multitude of hair-like, non-woody roots.

Gravity pulls primary root; secondary roots branch horizontally. When a tree seed germinates, the primary root grows down in the soil in response to gravity. Secondary roots then branch off horizontally, with subsequent branching into tertiary roots, etc. Absorption of water and mineral nutrients is the function of the very fine, non-woody roots (the feeder roots). With continued growth, each root will lose its ability for absorption. These larger woody roots then function as the transport system for water and nutrients from the new feeder roots to the stem. They are also the trees' system of anchorage and a food storage area. The resulting system thus consists of several main transport roots that extend radially and horizontally from the tree base and divide into ever smaller roots, each ending in a dense mass of fine feeder roots. Because of the horizontal growth pattern of the

tree root system, nearly 99 percent of all the trees root mass is usually located in the top three feet of soil. The roots can also extend far beyond the trees drip line. Typically radiating out from the trunk a distance of 0.5 to 1.5 times the trees height. Imagine tree roots branching in a round pie place one-yard deep and with a diameter 2 to 3 times the trees height.

This growth pattern is a direct result of the root biology. When the soft feeder roots become woody, or if they are lost to insect feeding or other physical damage, the absorption capacity is lost, and new feeder roots must be produced. This means absorption is dependent on continued growth of new roots. Roots only grow where the physical and chemical environment is correct - temperature, moisture, aeration, pH, nutrient supply, and soil structure.

Roots grow where moisture is available.

Roots do not seek water; they grow where moisture is available. Roots also need oxygen, and growth is restricted where oxygen is limited. Unless the tree is particularly adapted to growing in wet, swampy soils, the maximum rooting depth possible is just above the water table. In most soils, a satisfactory growing environment exists only within the top few feet. In fact, the greatest proliferation of tree roots will be found in the transition zone at the soil surface under the leaf litter in a forest or thoroughly intermingled with grass roots in a lawn.

The landscaping implications from this pattern are significant. In the case of tree fertilization, one researcher has stated, "Any tree growing in a well-fertilized lawn is well fertilized." Because the trees' feeder roots are in the same soil volume as the grass roots, both have access to all the applied fertilizer.

There is no advantage to punching holes in the ground for deep application of general

fertilizers, including phosphorus. We do need to be aware that the tree and turf are competing for those nutrients. Poorer growth of both may indicate that a higher application rate is needed, although remember that water may actually be the limiting factor.

Other lawn treatments can pose a threat to the trees. Some good turf herbicides are very damaging to trees and shrubs when absorbed by the roots. The herbicide does not have to move down in the soil to the tree roots; these roots are with the grass and weed roots. Restricting herbicide application to the lawn outside the tree canopy may not be sufficient as we do not know how far the roots extend.

Injury to roots can take years to show.

Additional care is needed when the soil is disturbed. Construction or landscaping activities that cut roots of mature trees will often lead to the death of part or all of the tree top, commonly two years or more after the injury was done and forgotten. Keep in mind that tree roots do not respect property lines. The effects of these activities in your yard may be in your neighbors trees, and vice versa.

By far, the most common and serious root injuries we inflict on mature trees are from changing soil aeration. Adding soil, even as little as a few inches, over the existing surface places the major root mass that much deeper. With less oxygen the roots may die quickly, and unless new roots can be rapidly produced in the surface soil, the tree will die. Soil compaction has the same effect, reducing the soils air supply plus creating a physical barrier to new root growth. Recreating and other areas that receive regular foot or vehicle traffic are prone to this problem.

This information is based on Tree Roots - Where are They, by Alan R. McDaniel and reprinted from VNA Newsletter, July/Aug 1997.

IS YOUR TREE TALKING TO YOU?

H. Dennis P. Roan

**Mass. Dept of Forestry and Wildlife
Management**

The National Arborist Association (NAA) has issued a press release asking the following questions in reference to your clients' trees. With this very unusual spring (cold and in many places very little rain), now is the time to let the trees tell you something.

Here are some of the tree characteristics that the NAA suggests you'll want to look for.

Color of leaves. Off-color leaves may be an indication of a nutrient deficiency in the soil or that the trees root system is incapable of extracting the necessary nutrients, even though the nutrients are present. For instance, iron chlorosis causes progressive yellowing of newly emerging leaves in oaks and other species. Nitrogen deficiency also causes yellowing, but affects the oldest leaves most.

- Certain trees are susceptible to diseases that cause a distinctive change of leaf color.
- Premature fall coloration during the summer is generally an indication of a problem below ground that is creating stress conditions for the tree.

Misshapen leaves

- An upward curling of the leaf margin (cupping) is the classic symptom of damage from herbicides. Has your clients lawn or a neighbors been sprayed for weeds recently?
- Distorted leaves may be evidence of sucking insect damage or the presence of a disease organism.

THE BALANCING ACT OF WATER
Matthew S. Drzal
Michigan Peat

Thinness of the canopy

- Typically, when the uppermost part of the trees canopy begins to thin, the condition is characterized as decline. However, decline can have several causes sometimes acting in combination, that are treatable.
- Does your clients tree trunk look like a telephone pole (straight) where it enters the ground or does it have a natural root flair? the combination of thin crown and telephone pole appearance usually indicate that the trees roots have been covered with fill.
- The combination of thin crown and flat trunk on one side are the symptoms of a root that is literally strangling the tree.

No leaves, or losing leaves

- If a tree has failed to produce leaves this season you have reason to be concerned, especially if you have other trees of the same species in the yard. Sometimes, quick action is required to keep a serious problem from spreading.
- If a tree loses all or most of its leaves during the growing season, again, sound the alarms! This may be a sign of a very serious disease or a leaf-eating insect. Either way, trees cannot survive for long if they are repeatedly defoliated.

Reprinted from VNA Newsletter, July/Aug 1997. Originally printed in HORT NOTES, July 7, 1997.

“Eat your vegetables!” is an edict every kid knows. Growers hear a regular command, too: “test your pH and soluble salts!”

It’s good advice. Testing the pH and soluble salts of planting media gives growers advance warning to problems in the chemistry of greenhouse crops. a problem can be discovered days before it slows plant growth or causes permanent damage to the crop.

Get a handle on pH. Most mixes have an equilibrated media pH between 5.5 and 6.5. If just dolomitic limestone is added to peat mixes to adjust pH, it may take up to 21 days to equilibrate once moisture is added and the temperature of the media increases. It’s not safe to assume that the pH will be 6.0 when planting starts or that it will stabilize at 6.0 once in the greenhouse. Tracking a media’s pH upon arrival and weekly thereafter can reveal much about performance and management.

Use a pH meter to learn what effect water and/or fertilizer choices will have on a crop. Some water sources are neutral, some are alkaline--raising pH--and some contain high sulfate--lowering pH. Fertilizers have varying potential acidic and basic rates that affect media pH also. Testing water pH will help to determine which fertilizers to use or whether acid injection is needed. If pH registers outside the desirable range crop time can be affected and the risk of disease and crop loss increases.

Retesting media after applying water and fertilizer will indicate the buffering ability (resistance to pH change) of media and how water and fertilizers affect media pH. After developing a successful pattern, pH need only be checked to see if changes in fertilizer choice

or acid amounts are necessary to maintain stability.

When media pH is kept within desirable ranges, nutrient availability is highest and plant growth is most efficient. If pH registers outside the desirable range and is not checked until symptoms become visible, crop time can be affected by days or even weeks, more chemicals are needed and the risk of disease and crop loss increases. These can be expensive, yet for about \$60, growers can purchase a meter to monitor pH, giving them the power to grow as efficiently and cost-effectively as possible.

Monitor soluble salts. along with testing pH, the testing and recording of media electrical conductivity (EC) is just as important. EC meters can be used to determine the ppm of a particular injector-applied fertilizer. This can then be used as a test for proper calibration of the injector. EC tables are either printed on fertilizer bags or are available from the fertilizer manufacturer. Always subtract the EC of water, without fertilizer, from each reading off the end of the hose.

Information from the EC meter will indicate when to fertilize a crop to attain maximum production or when to avoid fertilizing to hold back a crop, prepare to ship or to prevent over-fertilization. When the two meters are used in conjunction, a grower will know both when to fertilize and which formulation to use.

Using the EC meter, gauge the soluble-salt level. If conductivity measures too high, prevent the crop from drying down to avoid salt burn, and lower the ppm of fertilizer before the next fertilization. Track the EC and media pH until the plants leave your operation.

Again, for about \$60, a grower can check soluble salts, It takes just 15 minutes to test pH and EC of collected media samples. Some meters don't require mixing of media water,

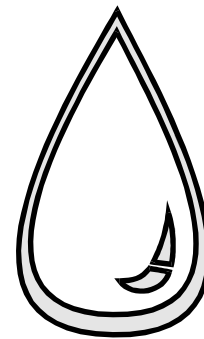
making the process almost effortless.

When purchasing pH and EC meters, include pH 4.0 and pH 7.0 buffers and a conductivity standard for calibration. With calibrated meters and consistent testing of media, it's possible to correct unseen problems before they become too damaging.

Have the irrigation water source tested annually. Water quality is used in fertilizer recommendations and is the starting point of many plant problems. At a minimum, water should be tested for pH, EC, sulfur and most importantly, alkalinity.

Reprinted with permission from Greenhouse Business, October 1997.

(<http://www.horticulture.com/greenbiz/>)



ANLA UPDATE Recent IRS Guidelines Activities

How it started: Without prior consultation, the IRS issued revised guidelines relating to possible ways in which the IRS will determine whether a firm is entitled to a special exception for farming businesses. This farming exception exempts qualified businesses from having to capitalize production costs for growing plants (or animals) and maintain inventory on these perishable life-forms while they're in production.

The challenge for the IRG is how to separate legitimate growing operations--plant/livestock--from businesses that are exclusively retail or middlemen that only move product, not grow it. So to help make things clearer, the IRS looks for business practices that could separate these two types of businesses. In these guidelines, the IRS thought they had identified two such factors: temporary containers and more vaguely, identifying businesses that “. . . merely buy and resell plants.”

ANLA's view. ANLA believes the IRS was wrong to apply these factors to determine whether a business is entitled to the special farming exception. There are thousands of businesses in this industry which are, in every way, agricultural businesses that use containers in which to grow plants. Secondly, the work “merely” is ambiguous. Ambiguity is not appropriate in the tax code.

We decided to move, and move quickly because the guidelines were effective immediately, even though they were characterized as “temporary.” It's important to note that the IRS is supposed to consult with an industry Prior to the implementation of rules, if those rules impose new bookkeeping requirements on small businesses. That's the law. And ANLA challenged the IRS on this point by getting the

chairman of the Senate Small Business Committee to write to the Secretary of the Treasury to complain.

IRS responds. After some delay, the Treasury Department wrote back to Senator Bond and explained that they didn't intend to change anything, these guidelines are merely clarification. Furthermore, the IRS had not received any letters from the industry so “Where's the beef?”

Well ANLA, with your help, sent them the whole cow and the cow was not content.

ANLA responds. ANLA was the only entity to testify at the hearing. (FNGA also weighed in with written comments.) During the hearing, the IRS panelists restated their intentions and we pointedly explained why their selection of wording didn't achieve what they thought it achieved.

ANLA score TKO. On the Friday after Thanksgiving--and only nine days after the hearing--the IRS sent a letter to all the people who had written to them at ANLA's request. The letter included a copy of a new IRS Announcement number 97-120.

While the letter restates the IRS's intentions and implies that ANLA was unnecessarily rabble-rousing, IRS Announcement 97-120 gives ANLA and the industry what it wanted:

1. Announcement 91-120 retracts, categorically, the IRS's attempt to use temporary containers as a determinate. I quote, “Under the regulations, nursery growers using the farming exception are permitted to deduct these costs even if the plants. . . are grown by the nursery in temporary containers.” This is not where the draft guidelines were going.
2. Announcement 97-120 states “. . . farming

exception cannot be used for costs incurred by a taxpayer. . . [which] merely buys and resells plants grown entirely by others.” Please note: the word “entirely” was not in the original draft, not is its inclusion mentioned in the IRS’s accompanying cover letter. It think you’ll agree that adding “entirely” changes the meaning, well, entirely.

Reprinted from a memo provided by Bob Dolibois, ANLA.

So, while the IRS letter makes it appear that nothing has changed, the accompanying Announcement 97-120--now in effect--says it all.

And not any too soon. Just since this brouhaha began several months ago, ANLA has already learned of three audits of nursery and floral growing operations where these guidelines were being cited to force capitalization of costs or inventory on these businesses.

It ain’t over, yet. There is a lot to be pleased about in this ruling. At the minimum, it restores--even clarifies to the industry’s benefit--when the exception can be used. I is my hope, too, that in the future the IRS regulation writers will ask us, in advance, how the industry conducts its business, so we don’t have to do this again.

On the other hand, this IRS effort and even this favorable Announcement signals very clearly that the IRS will aggressively go after any industry operation which claims the farming exception, but doesn’t grow plants and is buying and reselling plants grown entirely by others.

Thanks for your help. This was a remarkable achievement for ANLA and the industry, particularly for its speedy resolution. Thanks for your help in the call-for-action letters campaign. This effort reinforces the importance of the Lighthouse Program. Industry grassroots response does matter!

PESTICIDE NEWS

Insecticides:

NEU 1165M SLUG & SNAIL BAIT - (iron phosphate) - W. Neudorff -- EPA has approved an application to register this new active ingredient for domestic/non commercial food use on vegetable gardens, fruits and berries and for ornamentals, greenhouses and lawns (FR Vol. 62, 9-30-97)

NIVRAL (thiodicarb) - Rhone Polenc - A new product being developed to control snails and slugs in greenhouses in container nurseries and on ornamentals.

PENTAC (dienochlor) - Novartis - Due to the high cost of re-registration the company has proposed to EPA to cancel registration for all usages of this product. It is currently registered for use on non bearing nut and fruit trees and a wide variety of ornamental herbaceous and woody plants. Any offers to purchase the product or support its registration will be considered.

CITATION (cyromazine) - Novartis - Added to their label the control of leafminers and fungus gnats in landscape ornamentals, container grown ornamentals, lathe and shadehouse ornamentals, bedding plants and interiorscapes. Also to control shore flies on greenhouse ornamentals and interiorscapes. Also leafminer control on chrysanthemums was added as well as the ornamental species gerbera daisy, baby's breath, impatiens, marigold, poinsettia, verbena and others.

KAOLIN (Al₄ Si₄ O₁₀ (OH)₈) - Englehard Corp. - EPA exempted residue tolerance requirements on ornamentals. It is used at 10-100 lbs/A at 7-10 day intervals to control various insects and diseases. Expires 12-31-99.

MALATHION - As a result of the IR-4 Project the usage on chrysanthemums can be added to their label.

OFTANOL (isofenphos) - Bayer - As a result of the IR-4 Project they can add 22 new ornamental species to their label.

TURCAM (bendiocarb) - Agr Evo - As a result of the IR-4 Project they can now add 9 new ornamental species to their label.

Fungicides:

ARMICARB 100 (potassium bicarbonate) - Proposed to EPA a changed use for this product to register it to control powdery mildew and other diseases on ornamentals. (FR Vol. 62, 9-30-97).

RONILAN/ORNALIN (vinclozolin) - BASF - To clear the confusion, uses supported by the company for this product include, ornamentals (herbaceous and woody), and turf (ornamental for commercial use). Uses unsupported and expected to be deleted include turf (for non commercial usages).

STOPIT (polyoxin D zinc salt) - Kaken Pharmaceutical - EPA approved an application to register this new active ingredient on turf in golf courses home lawns, parks and institutional grounds to control various diseases. (FR Vol. 62, 9-19-97).

ALIETTE (fosetyl-Al) - Rhone Poulenc - As a result of the IR-4 Project they can now add the usage on azaleas and roses to their label.

CYGNUS (kresoxim-methyl) - BASF - This is a new 50 WDS formulation being developed for usage on greenhouse ornamentals to control powdery mildew.

ORNALIN (vinclozolin) - BASF - As a result of

the IR-4 Project they can now add to their label the usage on 15 new ornamental species.

PATCHWORK (fenarimol) - Riverdale Chemical Co - A new formulation containing a granular. 78% active ingredient developed for usage on turf to control various diseases. It is available in 30 lb. bags.

Herbicides:

GALLERY (isoxaben) - DowElanco - As a result of the IR-4 Project they can now add to their label the usage on dogwood and holly.

PRISM (clethodim) - Valent - As a result of the IR-4 Project they can now add to their label the usage on daylilies and stone crops.

TREFLAN (trifluralin) - DowElanco - As a result of the IR-4 Project they can now add to their label the usage on bellflower, coneflower, pincushion flower, sage and speedwell.

Miscellaneous Chemicals:

DI TERA (Myrothecium spp) - Abbott - This biological nematicide has received EPA registration to use on turf to control nematodes.

CYCOCEL (chlormequat) - Olympic - As a result of the IR-4 Project they can now add to their label for this growth regulator the usage on geranium and hibiscus.

RESEARCH BRIEFS

Propagation:

Using matric priming to speed Ky bluegrass and tall fescue germination. Matric priming involves exposing seeds to solids containing limited amounts of water or aqueous solution. When primed, Ky bluegrass and tall fescue seeds germinate more quickly and have better early seedling growth. When seeds are stored at 5 C, the benefits from priming are maintained for up to 10 days. When seeds are stored at 20 C, the benefits from priming are maintained for 10 days in Ky bluegrass but only 2 days in tall fescue. The primed seed and moist vermiculite may be sown together to speed turf stand establishment. (W.G. Pill, J.J. Frett and I.H. Williams).

Excerpted from HortScience 32:1061-1063. 1997.

Seed treatments improve germination of switchgrass. Switchgrass (*Panicum virgatum*) is one of the perennial, native, warm-season grasses recommended as a component of wildflower meadows. Seed treatments to alleviate low seed vigor and seed dormancy of switchgrass would enhance establishment of either plug transplants or seedling after direct sowing into the meadow. This research shows that heavier seeds have a higher percentage germination than lighter seeds within a seedlot, so removal of lighter seeds improves seedlot germination. Acid scarification (exposure to 8M H₂SO₄ for 5 min.) followed by a 15-min. exposure to 5.25% NaOCl additively increased germination. Prechilling the seed [14-day exposure to 0.2%(m/v)KNO₃ at 5 C] following their exposure to H₂SO₄ and NaOCl further increased germination. All three treatments combined (acid scarification, NaOCl, and prechilling) almost doubled final emergence and greatly increased seedling shoot dry mass.

However, the effectiveness of these seed treatments was lost after 32 months of dry storage. (J.G. Haynes, W.G. Pill, T.A. Evans)

Excerpted from HortScience 32:1222-1226. 1997.

Container Production:

Larger containers yield larger plants.

Increasing container volume results in larger salvia plants with more lateral growth, hence improving plant quality. Larger containers also hasten flowering of salvia, which can shorten the production cycle by several days. Commercial growers must weigh the advantages of larger pots against the disadvantages of fewer plants per unit area. (M. Van Iersel)

Excerpted from HortScience 32:1186-1190. 1997.

Optimizing growth of *Amur maackia*. *Amur maackia* has potential for increased use as a tree of medium size in urban landscapes. However commercial production is limited and there is little information on producing this species in containers. Two media combinations, 1 perlite: 1 vermiculite and 5 sphagnum peat: 3 perlite: 2 soil (pasteurized, fine-loam) resulted in 3 times the dry mass of plants grown in soilless media that contained composted bark. After 70 days, plant grown in the media containing soil attained the greatest dry mass. Given their potential benefits, the researchers recommend further examination of soilless media that can evoke growth similar to or greater than that of plants cultured in a medium containing soil. Application of N at 7.5 mM with greater than or equal to 50% as NH_4 at each irrigation increased foliar N content and dry mass. (A.S. Aiello and W.R. Graves)

Excerpted from HortScience 32:1200-1203. 1997.

Effect of surflan on plants grown in nurseries with water recycling systems.

Surflan (oryzalin) concentrations equal to those found in nursery runoff water did not reduce growth or influence physiological processes of a sensitive (fountain grass) and tolerant (gardenia) plant species. Therefore, surflan appears to be safe for weed control in conjunction with water recycling systems in container plant production. If surflan concentration reach 1000 ug/liter (1 ppm) in irrigation water for a sustained period, the growth of sensitive species could be reduced. (R. Bhandary, T. Whitwell, J. Briggs and R. Th. Fernandez)

Excerpted from J. Environ. Hort. 15:169-172.

Growing shade tree in in-ground (pot-in-pot) containers.

In this study with ash and birch, substrates with better drainage and lower bulk density were more effective for growing shade trees in in-ground containers. (C.L. Murray, G.P. Lumis and C. Chong)

Excerpted from J. Environ. Hort. 15:183-186.

Biostimulants do not consistently increase growth.

Humate-based products have been aggressively marketed to nursery producers as biostimulants that increase plant growth. Four types of biostimulants were tested on Turkish hazelnut, grown in containers with pine-bark substrate. Humate was applied as a topdress; formulated as a wettable powder and applied as a substrate drench; applied as a pre-plant root soak; and with various purported root growth-promoting additives, also applied as a root soak. All treatments were tested with low, medium and high fertilizer application regimes. Not treatment increased top growth compared to untreated trees and the root-soak treatments had the lowest top growth. (M. Kelting, J. R. Harris, J. Fanelli, B. Appleton and A. Niemiera)

Excerpted from J. Environ. Hort. 15:197-199.
Nitrate-N loading to soil can be significant beneath container crops. Controlled release fertilizers (CRFs) can contribute substantial amounts of NO₃-N to the soil profile beneath a container production area (gravel or porous fabric-covered area, not plastic-covered area) even when a split CRF application is used. The large and frequent irrigation volumes typically applied to container crops, combined with the intensive nature of container production may cause NO₃-N to leach deep into the soil profile. Growers must be careful to avoid excessive irrigation volumes which are the result of continuing irrigation beyond the time needed to supply an adequate amount of water to the crop. (D.J. Colangelo and M.H. Brand)

Excerpted from J. Environ. Hort. 15:205-210.

Landscape Installation and Management:

Mulching ornamental plants with pesticide-treated grass clippings. There is significant potential for plant injury when using clipping obtained from a turf that has been recently treated with a pesticide. As was expected, postemergence broadleaf herbicides were quite injurious, but other herbicides or plant growth regulators can also cause plant injury. This study indicated that even after two mowings, clippings still contained enough herbicide residue to cause significant plant injury. If herbicides or plant growth regulators are used in a turf, the clipping subsequently collected should not be used as a mulch for at least 2 weeks after pesticide application or until three mowings have occurred. Rainfall or irrigation after application can reduce the injury potential. Mulching ornamentals with grass clipping is an excellent way of disposing of yard waste and improving the performance of a home garden: however, returning grass clippings to the turf is still the best option for their disposal. (B.E. Branham and D.W. Lickfeldt)

Excerpted from HortScience 32:1216-1219. 1997.

Cutless can carryover from treated plants in leaf residues and chipped wood wastes.

Green manure and mulch can contain detrimental quantities of cutless (flurprimidol) and other growth regulators used for suppression of shoot growth of landscape crops, turf grasses and urban trees. Finely ground plant residues resulted in the most damage. The larger sized plant residues and wood chips normally used as mulch or soil amendments with landscape plants should not cause any problems. (G.S. Premachandra, W.R. Chaney and H.A. Holt)

Excerpted from J. Environ. Hort. 15:215-221.

Establishment of trees in treeshelters. Tree transpiration was reduced by the buffered conditions in shelters even while stomata were open. This response varied with species, as ash lost more water both with and without shelters than did maple. Although shelters reduce water loss, their potential for increasing drought avoidance will probably vary with the environment. In a hot, arid climate with season-long drought, a prolonged period without rain or irrigation appears to result in oven-like conditions in shelters. In a more mesic region, surface evaporation and tree transpiration would probably remain higher, thus favoring tree growth during an intermittent drought. Winter damage may also increase with shelters when sunny days and high insolation occur during the winter. (R. Kjelgren and L.A. Rupp).

Excerpted from HortScience 32:1281-1283. 1997.

Insect and Disease Control:

Organosilicone surfactants help control fairy rings. Organosilicone surfactants increase the

ability of water to move into soil. These surfactants by themselves, without additional fungicides have considerable potential for the management of fairy ring. Surfactants almost completely eliminated mushroom production and greatly reduced the occurrence of mycelium. (P.V. Blenis, L.B. Nadeae, N.R. Knolwes and G. Logue)

Excerpted from HortScience 32:1077-1084. 1997.

Rapeseed meal (RSM) significantly reduces black vine weevil larval numbers. RSM comes from *Brassica napus*. When applied as a mulch, RSM greatly reduced black vine weevil larval numbers. But a method of application which is less labor intensive would be essential in a production setting in order to be economically feasible. One possibility is to breed *Brassica* spp. with higher levels of isothiocyanate-generating glucosinolates to have a greater insecticidal potential. (L.E. Elberson, J.P. McCaffrey and R.R. Tripepi)

Excerpted from J. Environ. Hort. 15:173-176.

Some Ilex species are more resistant to twolined spittlebug than others. *Ilex cornuta*, *Ilex glabra*, *Ilex verticillata* and *Ilex vomitoria* were generally resistant to damage from twolined spittlebug. *Ilex cassine* and *Ilex opaca*, as well as the hybrids between the two parents (*Ilex attenuata*) were very susceptible to damage. (S.K. Braman and J.M. Ruter)

Excerpted from J. Environ. Hort. 15:211-214.

Weed Control:

Recycled waste paper as a landscape mulch.

This research indicates that recycled paper mulch at a 1 inch depth around annual species provides weed control equal to or better than standard landscape treatments, and causes little

or no growth suppression when amended with P. The phosphorus amendment is believed to bind excessive aluminum, which causes stunting when no P is applied. (D.R. Smith, C.H. Gilliam, J.H. Edwards, D.J. Eakes and J.D. Williams)

Excerpted from J. Environ. Hort. 15:191-196.

Christmas Tree Production:

Ability of different species to maintain freshness during display. Atlantic White Cedar (AWC), Arizona Cypress 'Carolina Sapphire' (CS), Eastern White Pine (WP), Leyland Cypress (LC) and Virginia Pine (VP) have all been considered as possible Christmas tree species. The postharvest period has two phases: 1) the time before a cut tree is returned to water, and 2) the time after placement in water. With respect to (1), WP and LC were best, VP and AWC worst. With respect to (2), LC and CS were best and VP and AWC were worst. Postharvest keeping quality of WP was far superior to that of VP. (L.E. Hinesley and L.K. Snelling)

Excerpted from HortScience 32:1252-1254. 1997.

Publications

Appendix: Insect Cocktail - has been released for the book - **Identification of Insects and Related Pests of Horticultural Plants**, by Richard K. Linquist. For more information, call (614)487-1117; fax (614)487-1216; or e-mail ofa@ofa.org.

Tips On Growing Specialty Potted Crops, Ohio Florists' Asso., 2130 Stella Court, Suite 200, Columbus, Ohio 43215-1033. Before 11/15/97 member cost \$25/non \$30, after 11/15/97 member \$30/non \$35. For inquiries, call (614)487-1117, fax:(614)487-1216, or e-mail: ofa@ofa.org.

Weekly e-mail newsletters. Timely news and trends from Branch-Smith Publishing's staff of editors and writers is delivered each Monday evening, free-or-charge, through e-mail. They include; The Weekly Dirt, from Garden Center magazine Editor Mitch Whitten; **NMPRO** Weekly E-mail, from David Morgan, editor of Nursery Management & Production magazine; and Weekly GreEn-MAIL, from David Kuack editor of Greenhouse Management & Production (**GMPRO**). To subscribe, access Branch-Smith's web site, the Green Beam, at www.greenbeam.com and click "E-mail Newsletter" in the navigation bar.

Soil Prep and Watering Guides for Turfgrass Sodding. Turfgrass Producers International (TPI) has released two brochures that address the two most critical aspects of turfgrass establishment. "Soil Preparation for a Beautiful Lawn" and "Watering New Turfgrass Sod." Contact TPI for more information (847) 705-9898.

Calendar

January 2 - March 13 - Basics of Plant Materials for Landscape Use- 11 consecutive Friday mornings, 8:30 am - noon/ **Basics of Landscape Design** - 11 consecutive Friday afternoons, 1:00 pm - 4:15 pm/ **Solving Landscape Problems with Plants** - 10 am - 2:30 pm/ **Electronic Financial Mgt. for Landscape**, 8:30 am - 4:40. Registration: Cook College, Office of Continuing Professional Education, P.O. Box 231, New Brunswick, NJ 08903-0231, Phone:(908) 932-9271; FAX:(908) 932-8726, E-Mail: ocpe@aesop.rutgers.edu.

January 5-7 - 1998 MANTS Show, Baltimore Convention Center, (800) 431-0066, or (410) 882-5300; FAX (410) 822-0535; e-mail MANTSINC@aol.com.

January 6,7,8 - Eastern Pennsylvania Turfgrass Conference, Valley Forge Convention Center. Contact: PA Turfgrass Council (814) 863-3475, Nancy Bosold (610) 489-4315.

January 6,7,8 - Ontario Turfgrass Symposium, Regal Constellation Hotel, Toronto, Ontario. To register: Office of Open Learning, Rm:159, Johnston Hall, University of Guelph, Guelph, Ontario, N1G 2W1, FAX:519-767-1114, Tel: (519) 767-5000. Web site: www.open.uoguelph.ca/OTS.

January 7-8 - Symposium: "Finding Your Niche: Creating and Marketing Natural Landscapes." the Connecticut College Arboretum, Morris Arboretum of the University of Pennsylvania and New Directions in the American Landscape. Villanova University, Villanova, PA, call:(215) 247-5777, ext. 156.

January 10, 17, 24, 31; Feb., 7 - Longwood Gardens - Continuing Education, Fall. Garden Design Studio, five sessions. Location: Acer

Room, fee \$109. For more information call:(610) 388-1000, ext. 516, FAX:(610) 388-2908.

January 12-16 - Advanced landscape integrated pest management short course. University of Maryland Cooperative Extension Service. Plant Sciences Bldg., College Park. Call (301) 405-3913 or FAX:(301) 314-9290.

January 13 - The Building for Success, Professional Seminar, Longwood Gardens, Kennett Square, PA. Contact: Association of Professional Landscape Designers, 104 S. Michigan Ave., Suite 1500, Chicago, IL 60603. (312) 201-0101, FAX:(312) 201-0214, Web site: //www.apld.com. Advance registration deadline is 12/30/97. Please call for more information.

January 13-15 - Delaware Horticulture Industry Expo, Sheraton, Dover, DE. Contact Marianne McGloin, (302) 677-1895.

January 19-22 - The 1998 Professional Horticulture Conference of Virginia, Ltd and Trade Show, Virginia Beach Pavilion & Hotel, Virginia Beach, VA. Contact Polly Garden, Registration Coordinator (757) 523-4734, or (757) 532-0057, FAX: (757) 366-9604 for questions about the conference.

January 20-21 - Finding a Niche: Creating and Marketing Natural Landscapes, two day seminar for practitioners from all segments of the landscape professions. Morris Arboretum, Philadelphia, PA., Fee per person: 1 day: \$129/2 days \$239, student rates available. For more information call: PA (215) 247-5777, ext 156.

January 22 - Eastern Regional Landscape & Nursery Seminar, Delaware Valley College, Doylestown. Contact: David J. Suchanic (610) 489-4315.

January 26 - 8th Annual University of Delaware Pesticide Conference. Pesticides and Wildlife, Delaware State Troopers Association Hall, Dover, DE. Contact Susan Whitney at (302) 831-8886 for further information.

January 28 - Delmarva Agricultural Safety and Health Conference, Capital Grange, 8:00 a.m.- 12:30 p.m. There is no registration fee for those registering by January 22, 1998. Lunch is provided. Topics include handling flammables safely, hidden hazards in the workplace, agricultural health issues, farm equipment hazards, chemical hazards in the workplace and a rabies update. There will be a concurrent session for FFA members and vocational students attending. An exposition and health risk appraisal are also included. To register, contact Derby Walker at (302) 856-7303; Gordon Johnson at (302) 697-4000 or Carl Davis at (302) 831-2506. Or send an e-mail to derby@udel.edu; cjohn@udel.edu; or cpdavis @udel.edu.

January 29 & February 5 - Estimating & Bidding for Landscape Maintenance Workshop, Penn State Great Valley, Malvern. Contact: Jim Sargent (215) 345-3283 or Rick Johnson (610) 690-2655.

February 2 -27 - 29th Annual Turf Managers' Course, University of Guelph. Registration fee \$1,995, call: (519) 767-5000, (519) 824-4120, ext.2905, or (519) 824-4120, ext.2940; FAX:(519) 767-1114

February 5 or 6 - Industrial & Right-of-Way Weed Control, East Brandywine Fire Hall, Guthriesville. Contact: Lou Middletown (610) 696-3500.

February 6 - Today's Horticulture at Longwood Gardens. This winter symposium is sponsored by the Professional Gardener Alumni Association. For information contact, Lisa

Roper, Chanticleer Foundation, (610) 688-2919 or (610) 293-0149 (FAX).

February 5-8 - ANLA Management Clinic, Louisville, KY; Contact: (202) 789-2900.

February 17-19 - Landscaping Workshops. Landscape Contractors Assoc., MD, DC, VA. University of Maryland System Shady Grove Center, Rockville. Call (303)948-0810 or FAX:(301) 990-9771; e-mail lca@mgmtsol.com.

February 18,19,20 - Christmas Tree Short Course, Penn State Conference Center, Penn State. Contact: George Perry (717) 622-4225, Penn State Short Course Office (814) 865-8301.

February 24 - 1998 Annual Dinner Meeting and Trade Show, Hockessin Memorial Fire Hall, 4:00 PM - 9:30 PM. For more information, contact: David Birk, Chair (302) 888-4622, FAX:(302) 888-4945

February 17-20- Mid-Atlantic Direct Marketing Conference and Trade Show, "Positioning Yourself in Tomorrow's Marketplace," Willow Valley Resort and Conference Center, Lancaster, PA. Contact Carl German at (302) 831-1317 for further information.

February 27- Governor's Conference on Delaware Agriculture, The Sheraton Inn-Dover, DE, 7:15 a.m.-2:00 p.m. Contact Tom Ilvento at (302) 831-6773 or send an e-mail to Ilvento@udel.edu for further information.

March 1-8 - Philadelphia Flower Show. The Pennsylvania Horticultural Society. Pennsylvania Convention Center, Philadelphia. Call (215) 988-8836 or (215) 988-8840; FAX:(215) 988-8810.

March 5 - IPM/Biocontrol Conference, Villanova University. Contact: David J. Suchanic (610) 489-4315.

March 11 - Pruning Workshop, Neshaminy Manor Center, Doylestown. Contact: Scott D. Guiser (215) 345-3283.

March 12 - Pruning Workshop, Montgomery County. Contact: Julianne Schieffer (610) 489-4315.

March 17 - Pesticide Short Course, Penn State Great Valley, Malvern. Contact: Nancy Bosold (610) 489-4315, Rick Johnson (610) 690-2655.

April 29 - The Mid-Atlantic Interior Landscape Conference, Longwood Gardens, Kennett Square, PA. Contact: Tom Contrisciano (610) 378-1327.

July 11,12,13,14 & 15, 1998 - Ohio Florists' Asso., Short Course - **Educational Seminars/ July 12,13, & 14, 1998** - **All-Industry Trade Show**. Greater Columbus Convention Center, Columbus, Ohio. For more information contact: Ohio Florists' Asso., 2130 Stella Court, Suite 200, Columbus, OH 43215-1033, (614) 487-1117, FAX:(614) 487-1216, e-mail: ofa@ofa.org., home page: <http://www.ofa.org>.

DAN Video Library

The DAN started a video library in 1988. There are many good videos still available from the library for a modest fee (to cover postage and handling). Borrow these tapes to improve your knowledge or for use in employee training. Take advantage of this resource!

<u>Title</u>	<u>Time</u>
Growing Beautiful Lawns	60 min
Plant Propagation, Vol. I	25 min
Working with Pesticides	120 min
Blooming profits: Merchandising Plants for the Garden	15 min
Elements of Pruning	30 min
How to Control Pests and Disease in the Landscape	180 min
Successful Customer Relations for Garden Center Employees	30 min
Loading and Unloading Nursery Crops	13 min
Planting and Staking Landscape Trees	20 min
Landscape Irrigation, Maintenance and Troubleshooting	30 min
Pruning and Shearing Nursery Stock	20 min
Integrated Pest Management	20 min

Rental Guidelines

1. Rental available to DAN members.
2. Request video in writing to Marianne McGloin, Executive Director, DAN, on company letterhead or use order form.
3. Rental fee - \$10 (includes outgoing postage)
4. Rental time - Must be returned 2 weeks from receipt of tape.
5. Late penalty - \$2.50/day

Video Rental Order Form

I wish to rent _____
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from _____ to _____
(date needed) (return date)

Enclosed please find a check for \$ _____ payable to DAN.
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DAN member _____
Address _____

Send requests to Marianne McGloin, 952 Monroe Terrace, Dover, DE 19904.