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March

March 1 8th "Annual Brilliance" Garden Symposium sponsored by The Flower Company, Kittery, Maine; Speakers include Ed Bowen from Conway's Nursery, and Ellen Talmage from Talmage Farm, and Jacquelyn Nooney from The Flower Company; Cost \$65.00 includes lunch; Contact Karen at 207-439-4023 for registration information.

15-23 New England Flower Show; Bayside Expo & Executive Conference Center, Boston, MA 617-933-4984 or www.masshort.org

18 UCONN Perennial Plant Conference, Lewis B. Rome Commons on Storrs campus; Storrs, CT; pre-registration fee of \$60 per person due by March 11th. Make checks payable to UCONN; Registration includes information packet, lunch, (pending state approval) pesticide recertification credit; Various speakers will have autographed books available; Contact 860-486-2930 or mark.brand@uconn.edu or www.hort.uconn.edu/ppc

April

7-17 California Pack Trials; Pan American Seed, Santa Paula, CA

8-10 Fourth National IPM Symposium & Workshop; The Westin Indianapolis, IN; contact 217-333-2881 or www.conted.uiuc.edu/ipm

20 Easter

25 National Arbor Day

May

11 Mother's Day

26 Memorial Day Observed Nationally

July

15 MNLA Summer Meeting & Trade Show; Plimouth Plantation, Plymouth, MA; contact (413)-369-4731 or www.mnla.com

12-16 Ohio Florists Association Short Course; Greater Columbus Convention Center; Columbus, OH; contact: 614-487-1117

16-20 ANLA Convention & Executive Learning Retreat; Boston, MA; 202-789-2900 or www.anla.org

27-Aug. 3 Perennial Plant Symposium, Sacramento and San Francisco, CA; contact 614-771-8431 or www.perennialplant.org

August

6 NENA Summer Expo; Pleasant View Gardens, Loudon, NH; contact 508-653-3112 or www.NensyAssn.org

September

24-27 Society of American Florists Annual Convention; Boca Raton Resort & Club, Boca Raton FL; contact 703-836-8700

30-Oct. 4 American Society for Horticultural Science 100th Anniversary; Providence Rhode Island; contact ASHS 703-836-4606 or www.ashs.org

October

12-15 Association of Specialty Cut Flowers Growers National Conference & Trade Show; Fairmont Hotel Vancouver, Vancouver, British Columbia, Canada; contact 440-774-2887

21-23 IPPS Eastern Region; Portland, Maine; Contact Margot Bridgen; 860-429-6818

Visit www.nhplantgrowers.org for additional calendar items.

Departments

- 3 From the Board
- 7 Forum
- 11 New Hampshire News
- 14 Elsewhere in the News
- 25 How About Herbs?
- 26 Pioneer Pointers

Features

- 18 MEMBER PROFILE
Ron Hill—2003 Young Nursery Professional
Melissa Moore
- 19 A Letter from Peru
Paul Fisher
- 20 Tools for Measuring Ethylene Gas in the Greenhouse
Susan S. Han

On the cover: A hardy, deep-yellow magnolia was planted during a memorial ceremony on September 11, 2002, at the Royal Horticultural Society's Wisley Gardens. It usually takes years to approve a site for a new selection to be planted. It was a very moving moment for all of us. Photos courtesy Rick Simpson.

The Plantsman is published in early February, April, June, August, October, and December with copy deadlines on the first of each prior month. While camera-ready ads are preferred, set-up assistance is available at a nominal fee. Free classified advertising is offered as a member service. We will carry a short message (no artwork or logos) for one or two issues of *The Plantsman*.

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1/2	7 3/8	x	4 3/4	300.	75.
FULL	7 3/8	x	9 13/16	500.	100.

For further information, please contact the editor: Melissa Moore, 845 Loudon Ridge Road, Loudon, N.H. 03307; phone 603-267-8492; e-mail, Moore@worldpath.net

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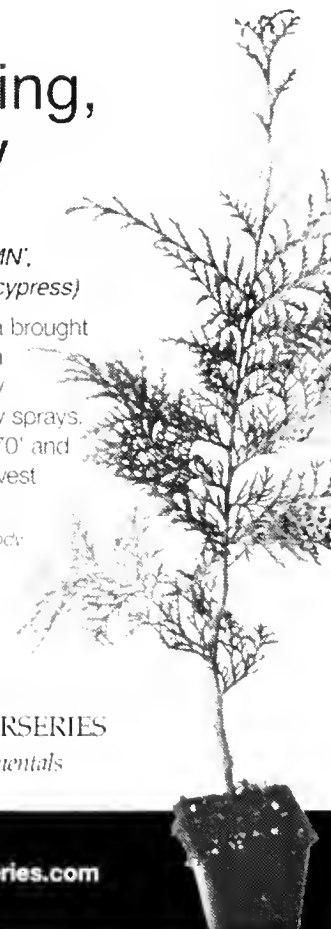


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We boarded a plane, soared over the Atlantic Ocean, and six hours later landed in a different world! The hustle and bustle of Heathro Airport...the unnerving experience of customs...cars on the left side of the road...what a trip!

Last fall, a large delegation of New Hampshire growers participated in the England Garden Center Tour, hosted by Nursery Business Consultants of Elk Grove, California. The Granite State growers in attendance were Rick Simpson from Rolling Green Nursery, Frank, Mary, and Tim Wolfe from Lake Street Garden Center, and George Munson and myself from Bedford Fields Garden Center.

The purpose of the trip for George and I was to discover some fresh ideas for our garden center. At Bedford Fields, we expect to expand by adding retail greenhouses and more nursery areas.

The tour included stops at fourteen garden centers. The information gathering process was rigorous. We were surprised at how different retailing is in Britain. The contact between the customer and garden center staff is the classic "soft sell" approach. Even the vendors at "GLEE," one of the world's largest trade shows would not attack at first glance.

All of the garden centers we toured featured large parking lots, ample signage, and a restaurant or

café. These centers are prepared for their guests. Garden center owners place a high priority on making sure the customer's every visit is a positive experience.

The store layouts are all designed in the "race-track" format. This concept helps to lead customers through different departments and eventually out into the nursery area. The beauty of it is that the customers are oblivious to the fact that they are being guided along an intentional path.

Almost without exception, the retail nursery areas are paved with concrete, brick, or asphalt. All have covered walkways to help reduce the inconvenience of inclement weather.

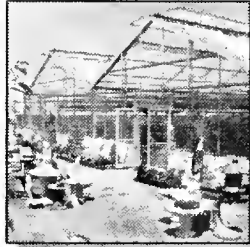


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BOOK SIGNING—DAVID AUSTIN AND RICK SIMPSON FOR HIS DAUGHTER INA GRACE.

It is awe-inspiring to see the retail nursery areas. They have extremely wide aisles, attractive benching, beautiful displays, creative merchandising, lots of pots, and surprisingly, smaller than expected plant material. Driving through England on a bus helps to explain why the plant material is offered in primarily one and two-gallon sizes: small yards!

Another consistent theme regarding all this plant material is that it is displayed off the ground: all on attractive benches. The David Austin Roses were displayed on benches. This arrangement elevated the beautiful blooms and placed them closer to their intended target.

Speaking of David Austin Roses, we visited David Austin's garden center and nursery as well! Our tour guides, Ian and Lisa Baldwin, have led the England Garden Center Trip for ten years. They have never seen David Austin greet a tour as he did for us this year. He has written a new book on English roses and we

were buying them up, hoping for a chance at an autographed copy: One of Mr. Austin's employees eventually mentioned that he was coming out! He made us wait...and wait...and wait. It was like waiting for the Queen. After about forty-five minutes or so he finally came out and yes, we all got our autographs and photos!

Another highlight to the tour was the attractions we visited in between the scheduled garden center stops. We saw the Hatfield House Palace and Gardens, Litchfield Cathedral, Warwick Castle and Windsor Castle (Yes, the Queen was home.) We also spent a wonderful day at Wisley Gardens, home of the Royal Horticultural Society. We were there on September 11th. With very short notice, the folks at Wisley allowed us to plant a tree on the property in memory of those who died so tragically in New York City and Washington, D.C. one year earlier. It was a touching gesture and a solemn, heart-wrenching moment for all of us. As the sun and the tem-

perature began to drop, we observed a ceremony that included a poetry reading. The ceremony concluded with each of us adding a spade-full of dirt to plant the magnolia tree.

Gardening is a way of life in Britain. The southern areas that we visited could be classified as zone hardiness 6.5 to 7. People travel long distances and spend several hours, if not full days, at their favorite garden centers. There are many ideas to be examined and tried in our country. Which ideas will succeed? Will restaurants and cafés catch on? Will improved merchandising and signage replace aggressive salesmanship? It's already happening on the West Coast! Watch for trends and don't let the moss grow under your feet!

For more information about the 2003 fall tour, contact Nursery Business Consultants at 1-916-682-1069. Contact Paul Belhumeur, Bedford Fields, at 472-8880.

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Farm Bureau Delegates Elect Cole

At the NH Farm Bureau Annual Meeting held in Plymouth last November, delegates elected Douglas Cole to serve as a vice president of the state's largest farm organization. Upon his election to the board, Doug Cole, owner of D.S. Cole Growers in Loudon said, "For years, I've been encouraging NH growers to make the most of their Farm Bureau membership. Farm Bureau's efforts in the state house are vital activities."

Doug joins NH Farm Bureau President, Wayne Mann in working to further the interests of agricultural producers around the state. Chuck Souther of Concord and Daniel Briggs of Deerfield are also elected officers. Each month the president, vice presidents and county directors meet in Concord to review business, legislative items, membership services, and other agricultural topics.

The members who serve on the state board work closely with NH Farm Bureau staff. Rob Johnson, Executive Director, announced that Allyson Brehm of Chichester has recently joined the Farm Bureau as Media Relation Coordinator.

NHPGA Scholarship Awards

The New Hampshire Plant Growers' Association's Board of Directors is pleased to announce the two winners of the 2002 NHPGA Scholarship Awards: Nicole Carito and Heather A. Warren. Both winners are students at the University of New Hampshire.

Nicole is a floriculture student at the Thompson School of Applied Sciences. She will be graduating this year with an Associates of Science degree in horticulture and plans to enroll in the baccalaureate program for certification in agricultural education. Her goal is to become an educator for students who want to learn more about floral design and other aspects of horticulture.

Heather is an environmental horticulture student in the plant biology department at UNH. She is currently a college sophomore and also works the family fruit and vegetable farm with her husband and 10-year old son. She plans to teach agricultural education on and off the farm after completing her Bachelor of Science degree.

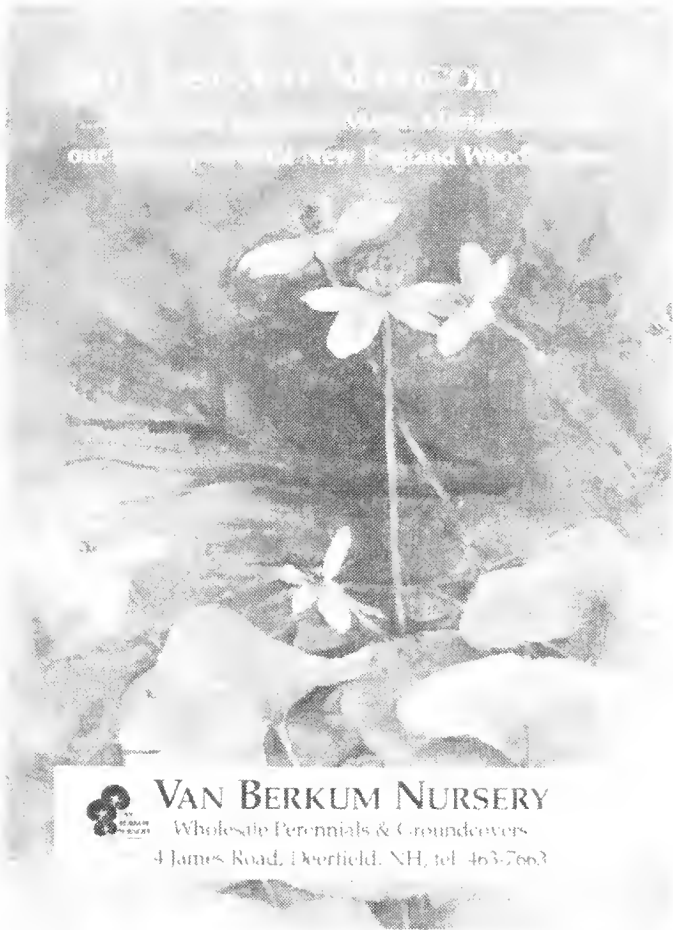
Each student will receive a \$500 scholarship. The scholarship money was raised at the auction held at the 2002 NHPGA Summer Meeting. The successful auction was the result of many generous donations from meeting participants and vendors. The auction is an annual fund raising event of the NHPGA.

Research Dollars at Work!

Cathy Neal, UNH Extension Educator, shared this summary of how research dollars awarded to the Extension Service by the New England Grows organization were invested in 2002.

The 2002 grant supported a no-pinch chrysanthemum trial, publication of a quarterly newsletter titled "News and Views for the Green Industry", applied research on timing of nitrogen fertilizer, and applied research on alternative production systems for trees and shrubs. The grant also made it possible to provide reference books for county extension educators with commercial horticulture responsibilities.

Funds approved for 2003 will be used for additional no-pinch chrysanthemum trials, continued publication of *News and Views* newsletter, media trials for container nursery production – an attempt to identify locally sustainable potting media, and an in-service training for county extension educators with commercial horticulture responsibilities.



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A New NHPGA Tool to Help Retailers Sell Plants

The New Hampshire Plant Growers' Association has teamed up with UNH Cooperative Extension to create a unique gardening booklet, tentatively titled *The Best Plants for New Hampshire Gardens—Annuals, Perennials, and Trees & Shrubs*. Funded by the Agricultural Promotion Grant we received last year, the booklet is being produced in response to requests from retailers, who asked for an information resource to provide to customers in spring.

This 40-to-50-page booklet will help gardeners choose and care for plants appropriate to their gardens based on eight different habitats. They include woodland areas, woodland edges, sunny meadows, alpine and rock gardens, water's edges and marshes, water gardens, beds and borders, and container gardens. The text will focus on the best plants for these habitats. Additional charts will provide information on each plant's height and spread, bloom time, color, and hardiness.

The next section will focus on garden design tips, choosing healthy plants, planting methods, and maintenance. The final section will include special listings of plants such as month of bloom, natives, winter interest, exceptionally long-blooming plants, and deer-resistant plants, along with additional resources for gardeners.

NHPGA is fortunate to have lined up an outstanding team of writers for the booklet. Cathy Neal, UNHCE Ornamentals—Specialist, will focus on "woodies" as well as choosing and maintaining plants. Margaret Hagen, Director of the UNHCE Family Home and Garden Education Center, will write about annuals and planting methods. Leslie van Berkum, co-owner of Van Berkum Nursery, will concentrate

on perennials and provide garden design tips. Andi Axman, of Sirius Marketing, will edit the booklet and write the introductory and resources section.

We're hoping that the booklet will be both useful and cost-effective for retailers and their customers. Scheduled for publication on March 21, 2003, the booklet's cost to NHPGA members will be low (\$3 each, plus shipping and handling) and reasonable for customers (\$5.95 retail). Watch for more information on ordering booklets in the next *Plantsman*, and by e-mail and snail mail.



NH Stories Unveils All-New Marketing Identity

New Hampshire Stories, Inc., the statewide not-for-profit organization promoting New Hampshire-made products and services, recently unveiled an all-new marketing identity, which kicks off a more concentrated, strategic effort to promote the value of New Hampshire-made products and services.

The forthcoming marketing campaign will include a comprehensive, sustainable, marketing effort to promote the buying of locally produced products and services in New Hampshire and beyond.

Using both paid and donated media placements (television, radio and print) regionally and statewide, New Hampshire Stories seeks to deliver a credible and memorable message and

image to corporate and individual consumers about the availability, diversity and quality of New Hampshire grown and made products and services.

"The objectives of our 'New Hampshire's Own' campaign are to increase sales of New Hampshire-grown and made products and services, create a recognizable brand for New Hampshire-made products and services, increase access to existing markets and provide expanded access to new markets for New Hampshire producers," says New Hampshire Stories Executive Director Molly Hodgson Smith.

At the heart of the campaign is a new logo that features individuals working at their crafts with the tag line, "New Hampshire's Own, A Product of Yankee Pride." The new logo will be featured in television and print ads and in all of New Hampshire Stories' marketing materials, including the latest edition of the New Hampshire Products Directory. In addition, members will be able to incorporate the new look into their own marketing and packaging materials, creating an integrated approach to the 'New Hampshire's Own' campaign.

Rumbletree, a Portsmouth-based advertising agency, worked on a pro-bono basis and developed the new identity. Funding for the marketing campaign is derived in part from Public Service of New Hampshire, the New Hampshire Division of Travel and Tourism Development and the New Hampshire Department of Agriculture, Markets and Food. In the five years since it was formed, New Hampshire Stories has enjoyed support from both the State of New Hampshire (Office of State Planning, Community Development Finance Authority, the New Hampshire Liquor Commission, Department of Resources and Economic



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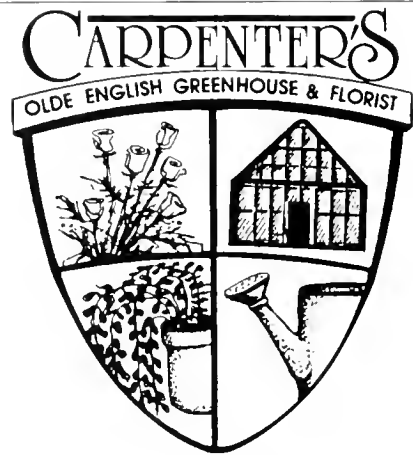
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Development and the Department of Agriculture, Markets and Food) as well as private entities (Public Service of New Hampshire, Providian Bank, Citizens Bank, Verizon and Tyco International).

New Hampshire Stories members, who now number more than 550, pay a nominal fee to join, based on the size of their organization. Member benefits include full use of the New Hampshire Stories logo in their own advertising, marketing and promotional efforts; links from the New Hampshire Stories web site to member web sites and a free listing of the New Hampshire Stories web site; a membership handbook and directory; quarterly newsletters; member-to-member discounts and referrals; access to training pro-

grams, workshops and seminars; and the opportunity to showcase products or services through displays and events where New Hampshire Stories is a participant.

Another member benefit is the opportunity to sell products in the two retail stores that New Hampshire Stories operates at the New Hampshire Liquor Stores on Route 95 northbound and southbound in Hampton.

Gail McWilliam Jellie, NHDAMF

Farm Bureau Member Services

A membership in NH Farm Bureau includes additional benefits such as a 10% discount on all Grainger purchases. Grainger products are described in full in their comprehensive catalog. The nearest location for

most NH residents is Manchester. Call Farm Bureau for additional information on this benefit.

NH legislators recently adopted the new International Building Code. These new regulations will be examined to see how they will impact the NH green industry.

Rob Johnson, NH Farm Bureau

Proven Winners Expands Product Line

The Proven Winners partners announced this winter the addition of potting soil, and fertilizers to their inventory line-up. Offered for the first time to retail customers this spring, the products are intended to give gardeners a jump on growing vigorous plants.

Proven Winners Press Release, Jan. '03

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Perennial Conference

The University of Connecticut is sponsoring a "Perennial Plant Conference" to be held at the University of Connecticut on Tuesday, March 18, 2003. This year's conference will be held at the Lewis B. Rome Commons on the Storrs campus.

This all day educational conference will address a wide range of topics focusing on herbaceous perennial production, landscape design and gardening. Topics were selected to appeal to nursery and greenhouse producers, retail garden centers, and professional landscapers and designers. Two concurrent educational sessions will feature naturally recognized speakers from both industry and academia.

Among the speakers at the conference is Pam Duthis, from the Gifted Gardener in Northbrook, IL. Her current book "Continuous Bloom" which won the Benjamin Franklin Award for best new garden book of the year in 2001 will be for sale at the conference. Pam will be speaking on "Designing for Continuous Bloom" and "A Garden for all Seasons: Designing the Mixed Border." Gordon Haywood, from Haywood Gardens in Putney, VT will discuss "The Uses of Stone in the Garden." He is author of the book *Stone in the Garden* that will also be available for purchase at the conference. Holly Shimizu, Executive Director of the US Botanic Garden in Washington, DC will be speaking on "Herbs as Ornamentals." Pierre Bennerup, from Sunny Border Nursery in Kensington, CT will discuss "Color in the Garden" and "Promising New Perennials." Robert Herman from Uncommon Plants in New Hartford, CT will be speaking on "Asters." Brain Corr from the Ball

Horticultural Company will be speaking on "Developing Perennial Cultivars for the Market." Bob Solberg, from Green Hill Farm in Chapel Hill, North Carolina will discuss "Selecting the Best New Hostas for the Garden Center and Landscape." Leo Blanchette from Blanchette Gardens in Carlisle, MA will be speaking on "Propagation of Perennials." John Bartok, Professor Emeritus, from the University of Connecticut Cooperative Extension, will be speaking on "Insect Pest Management for Herbaceous Perennials."

A pre-registration fee of \$60 per person is due by March 11th. If received after March 11th the fee is \$70.00 per person. Please make checks payable to the University of Connecticut. Included in the cost of admission: an information packet, lunch, opportunity to purchase autographed books and pesticide recertification credit for attendees from CT, RI, MA, ME, NH, and VT (pending state approval). Or visit our web site at <http://www.hort.uconn.edu/ppc>

For more information contact Dr. Mark Brand at 860-486-2930 or email: mark.brand@uconn.edu
UCONN Press Release, Mark Brand

2003-2004 Floriculture Guide

The 2003-2004 New England Greenhouse Floriculture Guide is now available through the Extension Service at New England State Universities. This Guide is prepared every two years and published by New England Floriculture Inc. in cooperation with the six New England State Universities.

This reference guide includes currently labeled products used in the greenhouse production of ornamental plants. The insect management section covers new insect biological

control information and has been expanded to include "Bio Control of Aphids, Fungus Gnats, Mites, Thrips, and Whiteflies". The Guide also includes complete information on growth regulators, weed control, and disease management of greenhouse crops.

The Guide is prepared by faculty and staff involved in floriculture research and extension at the six New England State Universities.
New England Floriculture Press Release

Simply Beautiful "stars" in two new DIY Cable Shows

This year the buzz around Simply Beautiful will be coming from more than just the bees as our easy care line of annuals are the star plants on the two new gardening series on the Do It Yourself Network (DIY).

Simply Beautiful is being featured in a total of 26 half-hour gardening shows on DIY—13 Weekend Landscaping and 13 Weekend Gardening shows. Each show is expected to reach 10 million cable viewers. More importantly for Simply Beautiful, both program hosts will direct viewers to the DIY website, (www.diy.net.com), which currently attracts 5 million hits per month. There Ball is featured as a plant source with hot links to www.simplybeautifulgardens.com.

Weekend Landscaping with host Mayita Dinos, began featuring Simply Beautiful in its two-part "French Kitchen Garden" on November 13. Weekend Gardening with Maureen Gilmer will begin airing in January 2003. Network executives expect hits at diy.net.com to quadruple when both new series begin airing. By the end of 2003, DIY viewership is forecasted to reach 20 million.

DIY is the hot new sister channel to Home and Garden Television (HGTV) and the Food Network, both of which attract over 70 million viewers. DIY along with HGTV and the Food Network are owned and operated by Scripps Network, one of the nation's most successful developers of original brands and content for cable television and the Internet.

*Ball Horticultural Co. Press Release
12/06/02*

Cornell offers distance-learning course on grafting

Without leaving home next spring, gardeners can learn to graft multiple fruit varieties onto a single fruit tree, create unusual growth forms and apply these skills to propagate plants that do not root easily. Cornell University's Department of Horticulture is registering students for a distance-learning course, "The How, When and Why of Grafting for Gardeners." The noncredit course includes Web-based lectures and quizzes, video demonstrations, hands-on grafting and interactive discussions.

Kenneth Mudge, the Cornell associate professor of horticulture who teaches the course, says the 10-week class requires about four to eight hours of work per week and will be offered March 17 through May 23, 2003. Students can read weekly lectures, view still images and video clips of grafting procedures, participate in online discussions and take multiple-choice quizzes. Students then will demonstrate their knowledge using hibiscus plants. The last day to register is March 10.

The compact disc developed for the course is integrated with the

Web site to show step-by-step procedures for three grafting techniques: chip budding, T-budding and top-wedge grafting. Mudge and William Head, professor emeritus, State University of New York at Morrisville, developed the video instruction for the CD. The course is limited to 50 students, and Mudge suggests registering early. There are two registration options. One costs \$225 and includes a password to access the Web site, a CD with videos of grafting techniques, and a certificate of completion issued by Cornell's College of Agriculture and Life Sciences; students are required to supply the plants and grafting supplies for hands-on grafting exercises. The second option costs \$300, which includes the instructional resources plus four hibiscus plants, a grafting knife, grafting supplies and shipping costs; students are responsible for pots and soil for repotting the hibiscus plants, which are shipped with planting instructions.

Course prerequisites include completion of a high school or college biology course, previous gardening experience and convenient access to a PC or Macintosh computer, the Internet and e-mail. Mudge also suggests a commitment and motivation to undertake serious learning. Other requirements include a CD-ROM drive, a Java-capable browser and QuickTime, version 4.0 or higher. To register, to view a sample lecture, "Reasons for Grafting and Budding," or to see a listing of all lectures and laboratory exercises, visit the course Web site at <http://instruct1.cit.cornell.edu/courses/hort494/mg/>.

FFA Gives SAF High Marks

The Society of American Florists (SAF) is well schooled in teaching

students about floral industry careers. The National FFA Organization noticed. FFA honored SAF for its outstanding support as a 35-year contributor during the FFA National Agricultural Career show, held last fall in Louisville, Ky.

During the convention for the past 35 years, SAF representatives have told students and educators about the many career opportunities available in the floral industry.

SAF also made headlines in FFA's magazine, *New Horizons* with a feature article that appeared in August. The article featured SAF and www.safnow.org as resources for floral industry career information. SAF's career brochure, "Make People Smile: Grow Your Future in the Floral Industry" was highlighted in this issue. The brochure was developed with the assistance of the American Floral Endowment.

June is Perennial Gardening Month

The Perennial Plant Association would like to remind growers of the promotional materials that are available for spring 2003. Members and Non-Members can request a banner, posters, or flyers. Each promotional item highlights the message "June is Perennial Gardening Month." The banner measures 2' x 6' and is an all-weather banner printed with UV resistant ink. The flyers have identical artwork and planting information. There is a minimum order of 100. Members pay \$0.12 each and non-members pay \$0.15 each. The posters in paper or plastic, measure 2' x 3'. They feature June garden plants and the vibrant blooms will turn heads and stimulate sales.

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- A New England plant hardiness zone map

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To order send check (payable to UMass) for \$17.00 to the UMass Extension Bookstore, Draper Hall, 40 Campus Center Way, Amherst, MA 01003-9244. Credit card orders are accepted by calling the Extension Bookstore at 413-545-2717.

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Eaton Farms	4
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Gold Star Sod Farm & Nursery	16
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Jolly Gardener	10
Joseph Giannino Co.	24
Laughton's Nursery	16
Liberty International Trucks	24
Millican Nurseries	10
Newton Greenhouse	24
North Country Organics	12
Northeast Nursery	16
Northern Nurseries Inc.	12
O'Donal's Nurseries	22
Pierson Nurseries Inc.	22
Pleasant View Gardens	8
Rimol Greenhouse Systems	Inside Back Cover
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Scenic Nursery	24
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Ron Hill—2003 NH's Young Nursery Professional

BY MELISSA MOORE

Ron Hill of Londonderry is New Hampshire's 2003 Young Nursery Professional of Year. This award, sponsored by the New England Nursery Association, honors a grower under the age of 40 who has shown exemplary achievement in the area of horticulture. Recipients have demonstrated involvement in his or her state association and have been active in promoting a positive image of horticulture to the public. Ron was recognized as this year's recipient at the NHPGA Annual Winter Meeting in Bedford and New England Grows.

Ron is an experienced grower with in depth knowledge of plant production. Beginning in 1995, Ron and his wife Kathy purchased nine acres and established Shady Hill Greenhouses. They currently grow plants in three greenhouses, and raise approximately 11,000 chrysanthemums outside on the ground. They started with just one greenhouse and supplied geraniums to wholesale markets. As more greenhouses were built the inventory and business hours expanded. Ron says, "Last year, was the first year we were open for retail sales." In 2003, Ron plans to open soon after Easter and will stay open seven days a week through the fall.

Each greenhouse is a double poly, Northern Star model measuring 30' x 96'. Ron says, "I prefer this length. With twenty years of experience in the green industry, I've learned that a 100 ft. greenhouse is a good length to heat, irrigate, and pull orders from. A house even fifty feet longer is just a little too long. A smaller house isn't advantageous for growers when you consider how much space is lost to benches and walkways."

The first greenhouse was filled with a mix of plant material. Now with three greenhouses, plants with similar needs can be grouped and grown to-

gether. The optimal temperatures for the particular plant species can be maintained in each house. Ron has automated some key labor-intensive areas of his business. Each house is watered automatically. The geraniums are grown on 8" trough benches. All other crops are on drip irrigation. The greenhouse climates are monitored around the clock. Should a problem arise, an alarm system delivers the information to Ron or Kathy.

A pot-filler eliminates hours of hand labor at potting time. Ron says, "The hours saved can be spent on more important things such as monitoring plant growth."

Retail customers are encouraged to stroll through the greenhouses and choose plants. Here they will find a mix of traditional favorites, new specialty annuals, and perennials. Future plans for Shady Hill Greenhouses include installing more display gardens around the property. "Display gardens give customers the opportunity to see how a plant will perform, and how different plants work together," says Ron. "We want to be a place where people can see and enjoy the plants. We're striving for a garden atmosphere." Perennial beds and window boxes on fences are likely to appear in upcoming seasons. Ron also envisions building a shade structure for shade loving plant material. "

In June, mum pots are set out in rows 4 pots wide that alternate with grass walkways. The rows of mums perpendicular to the main road are a spectacular natural attraction. When deciding which variety to grow, Ron considers color, flowering time and bloom type. He says, "My goal is to strike a balance between color and blooming time so we offer a consistent supply through the season." The utmost care is lavished on these attention-grabbing fall plants. Each plant is pinched three times before it is con-

sidered ready for sale. All mum pots are grown on drip irrigation. A soil-less mix is the media of choice for producing quality plants. Under this growing system, plugs planted in a variety of different sized pots will grow into a strong and well branched plant by Labor Day.

Ron also works as a salesman for W. H. Milikowski in Stafford Springs, CT. His territory is all of NH, Maine, and northern Mass. He stays current with new developments in the field through his work in plant sales. On the road, he has the opportunity to visit with many growers. He can observe first hand how a plant grows throughout the season. In his own greenhouse, Ron tries a handful of new introductions every year. The new varieties are offered along with traditional favorites such as fuschias, ivy geraniums, specialty annuals, and perennials.

Since Ron is on the road during each weekday, he is very strict with the delivery schedule of his own incoming plant material. The ideal delivery day is Friday, so the material is held just a few hours before it's potted up. All planting is completed on the weekends. To insure optimal growth, water and soil tests are sent out on a regular basis.

Ron enjoys plant production and greenhouse management because it's a diverse business. "You're never doing the same thing day in and day out," he says. "It's a four season business with a lot of variety."

Three years ago, Ron was elected to serve as a director for the NH Plant Growers Association. Throughout his term on the board he has spearheaded the membership committee. As a result, growers statewide have discovered the benefits of NHPGA membership and signed on as members.

A Letter From Peru

PAUL FISHER

Every seventh year, university professors are eligible for a sabbatical leave in order to catch up on the backlog of projects, learn new skills, and plan new initiatives. For 11 months, I am traveling overseas to Peru and New Zealand with my wife Rosanna Freyre and my two children, Diego and Maya. As many of you know, I am an Associate Professor and Extension Specialist in Floriculture. Rosanna is an Assistant Research Professor in Flower Breeding at UNH.

So what are we doing during this trip? The past week will give you a flavor.

I am writing research proposals for projects on plant nutrition and fungus gnat control, in order to fund new graduate students. You might find it interesting that it costs \$26,000 per year to fund a graduate student for stipend and tuition, plus typically \$15-25,000 per year for supplies and experimental costs (i.e. about \$80-100,000 for a two year Masters degree). In contrast, industry grants usually range from \$2,000 to \$30,000, so a lot of a professor's time is spent splicing together funding sources. Throughout this year, I am writing several grant proposals.

I am sure you are familiar with "publish and perish" – the need for academics to put out publications or get the boot. It is not a bad system. We have accumulated a lot of research over the last six years at UNH that is useless unless it is put into the scientific and industry press. I am especially focusing on pH and micronutrient nutrition



ROSANNA FREYRE COLLECTING
NOLANA IN LOMAS NEAR LIMA, PERU

work. Bill Argo of Blackmore Co. and I have just published a book "Understanding pH Management for Container-Grown Crops" (available from Meister Publishing, at Tel. 800-572-7740 ext. 205, or <http://meisterpro.com> and select "Find Products In: Ornamentals").

Using e-mail, I was able to communicate with poinsettia growers throughout New Hampshire and Massachusetts during the growing season. I was able to help with problem-solving and crop monitoring. For example, McLeod's Florist in Concord sent me digital photos of their poinsettia crop showing better root growth in plants grown in thick-walled pots. Poinsettias grown in thin pots grow poorer roots because light transmission reduces root growth. It is worth purchasing qual-

ity containers. Related to using the computer, I am currently working on new software to help growers track plant height, soil, and pest counts in their greenhouse (see the extension web site at <http://ceinfo.unh.edu/agriculture/documents/flora.htm> for these products). I am expanding the software to make them more useful for growers and teachers. I will be working on this with a university team in New Zealand in 2003.

Rosanna is developing new flower varieties for production as vegetative annuals. We just returned from four days (and 870 miles) traveling through Southern Peru collecting wild species of *Nolana* (somewhat similar to petunia in a white-blue-purple color range) in various "lomas". The coastline of Peru is desert, generally with very little vegetation except in the river valleys. The lomas are coastal sand hills in certain areas that are completely bare for most of the year. These areas suddenly change from desert into greenery and bloom for about 2-3 months during the moist period when coastal fog and sometimes rain briefly visit the area.

The concept of a short "sabbatical" may be useful for you also, to get away from the clutter of your normal routine. Could you plan a trip to visit other greenhouses and nurseries, get fresh ideas, take a break to look at the big picture, and reassess goals? To adapt an old saying, sometimes keeping your nose to the grindstone (concentrating on working hard) just ends up giving you a flat nose.

Tools for Measuring Ethylene Gas in the Greenhouse

BY SUSAN S. HAN

*Department of Plant and Soil Sciences
University of Massachusetts
Amherst, MA 01003*

Ethylene has long been associated with abortion, abscission, and premature death of leaves, buds and flowers of many plant species. Depending on the plant species, some flowers are very sensitive to ethylene and concentrations as low as parts per billion (ppb) can induce senescence. Other species are less sensitive to ethylene and may display either no symptoms or only have subtle changes in growth. Ethylene (C_2H_4) itself is a very small, gaseous compound that penetrates readily into any air space. Most greenhouse growers are aware of the potential damage from ethylene pollution in the greenhouse. In most cases, the source of the ethylene is a result of improperly installed heaters or from inefficient and defective units. Despite the precautions taken by growers to maintain and inspect the heaters regularly, it is not uncommon to have reports of crop loss due to ethylene pollution, especially in the Northeast where heaters are heavily depended upon for growing crops in the winter.

A gas chromatograph is the most widely recognized device for the precise measurement of ethylene. It is an expensive piece of equipment that requires regular maintenance and skilled technicians to operate and is thus generally used in academia or commercial research laboratories for detection of C_2H_4 concentrations. The current practice in the industry is to send gas samples from greenhouses suspected of ethylene pollution to an analytical laboratory which then uses a gas chromatograph to measure the ethylene concentration. Results from gas chromatography are dependable but the costs for the analyses are high.

In addition, this entire process usually takes a few days, a time period during which the entire crop may be destroyed.

In the past, I have received gas samples from commercial greenhouses in the New England area containing very high levels of ethylene, usually due to faulty furnaces. Typically by the time gas samples are sent for analysis, crop damage is substantial. With the sharp increase in energy costs, growers are prompted to plug small air holes in the greenhouse in order to reduce heating bills. These holes are vital for venting away any ethylene that might exist in the greenhouse and, when plugged, greatly increase the risk of ethylene damage to the crop. It is, therefore, critical that greenhouse growers monitor ethylene concentration in the greenhouse each year when first firing up the heater and on a regular basis during the crop production period.

In 2002, the New Hampshire Plant Growers' Association funded a research project in my laboratory to investigate the accuracy of a simple and inexpensive device for measuring ethylene in the atmosphere. The device from GASTEC™ is designed to provide instant readings of ethylene concentration from 100 to 400-ml gas samples. This method is in contrast to the 1-ml samples typically injected into the gas chromatograph. The GASTEC™ ethylene detector device works like a syringe. It has a plunger to pull air in and the tip of the device is connected to an ethylene detector tube (Fig. 1). According to the manufacturer, the tubes are constructed to detect ethylene concentrations in the range of 0.2 ppm to 800 ppm. There are

two types of tubes, one for the lower range of 0.2 ppm to 50 ppm and the other one for the higher range of 50 ppm to 800 ppm. The device is designed to draw in 100 ml of gas with each sampling and four withdrawals are required for the lower range tubes. For the higher range tubes, one gas sampling of 100 ml is sufficient. The detector tubes are disposable and can only be used once. Each tube has a calibrated scale printed on the outer surface and the degree of color changes inside the tube (from light cream color to blue), due to interaction of $(NH_4)_2MoO_4$ and $PdSO_4$ with ethylene gas to produce molybdenum blue, indicates the concentration of ethylene in the atmosphere. Each drawing of the 100-ml sample takes 2 minutes. Therefore, eight minutes (four samplings) is required for the sampling process in the low range tubes. For the high range tubes, only two minutes is required. The color change is spontaneous, therefore, giving growers instant readings of the ethylene level in the greenhouse. If the device proves accurate and produces consistent results, it would be a very useful tool for a quick check of the ethylene concentration in the greenhouse and, thus, greatly reduce the risk of losing the entire crop due to ethylene gas.

In order to determine the accuracy and dependability of the GASTEC™ for measuring ethylene gas in the greenhouse, we compared the ethylene readings from the GASTEC™ device to those of the Shimadzu 9A gas chromatograph in my laboratory. A series of experiments were conducted where ethylene concentrations ranging from 0.1

ing the level of pollution in the greenhouse, then gas samples should be collected and sent to commercial or academic laboratories equipped with a gas chromatograph for further determination. On the other hand, when color change is not detected, it indicates that either there is no ethylene in the greenhouse or if ethylene exists, its concentration is ≤ 0.1 ppm. At this level, some ethylene sensitive plants will be affected whereas those less sensitive would not display symptoms. If a grower detects subtle changes in plants that suggest possible ethylene existence in the greenhouse, then it would be advisable to send gas samples to an analytical laboratory for analysis.

It is best to check for ethylene pollution in the morning before the vents are open and after the furnace has been running for an entire night. As soon as the vents are opened, the ethylene gas dissipates quickly and it is unlikely that a grower will detect the existence of the pollutant. Collect the gas samples from the end opposite to the entry point through which some of the ethylene has already escaped. The color changes in the detector tube occur as soon as sufficient air (400 ml for the low-range tubes) has been pulled through the tubes and readings can be taken immediately. With time, the blue color (the reaction of the fillers inside the detector tubes and the ethylene molecules) will fade, therefore, stressing the importance of reading the tubes immediately. The fading of the color is temperature dependent and storing the tubes in a cooler (refrigerator) will slow down the process.

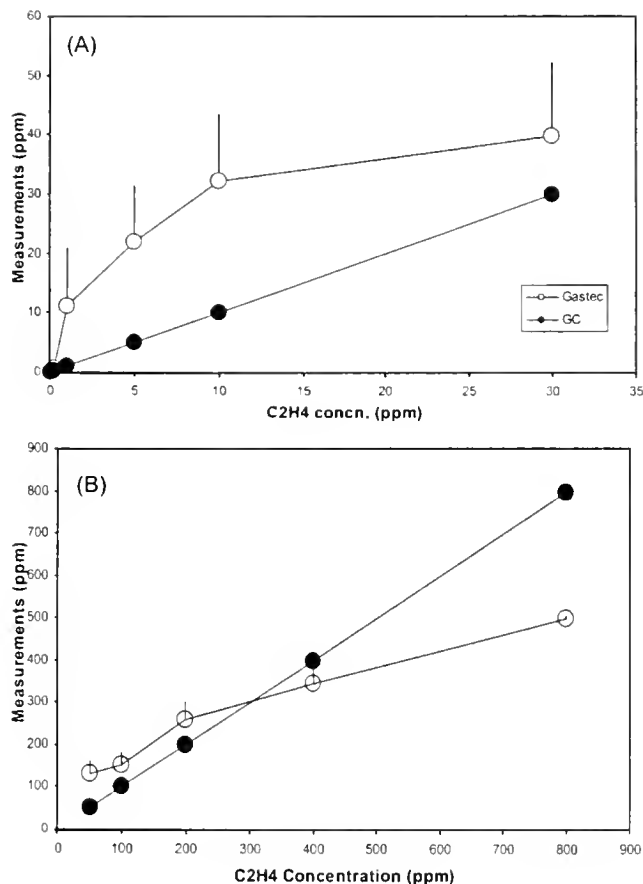


FIGURE 2. Determination of ethylene concentrations ranging from 0.2 ppm to 50 ppm (A) or from 50 ppm to 800 ppm (B) by 1 ml of gas injected into a Shimadzu gas chromatograph fitted with a flame ionization detector or by drawing 400 ml of gas through a GASTEC™ gas detecting device fitted with a low-range ethylene detector tube. Data are means \pm standard deviations of readings contributed by twelve participants in a blank study. Standard deviations smaller than the symbols are not displayed.

As previously stated, it is advisable that growers check for ethylene pollution in the greenhouse each year when first firing up the heater (ideally when the house is vacant) and periodically throughout the winter. Given that many greenhouses in the New England area consist of many small houses, each equipped with their own furnace, it would be a worthwhile investment for a grower to purchase an ethylene detecting device. I suggest that checking for the existence of ethylene in the greenhouses should be part of the regular cultural practices, just like checking for pH and conductivity during the growing season. By regularly monitoring for ethylene in the greenhouse, a grower will detect small leaks in the furnace before it becomes a serious problem and destroys the entire crop.

Acknowledgment: I wish to express my sincere gratitude to New Hampshire Growers' Association for partially funding this project and to all of the participants of this project in the Department of Plant and Soil Sciences at the University of Massachusetts.

Disclaimer: Use of trade names in this publication does not imply endorsement of products or criticism of those not mentioned. There are other gas detecting devices sold commercially under a different brand name but they appear to work similarly.



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Dill (*Anethum graveolens*)

MADELINE PERRON

Easy to grow, and not very fussy when it comes to soil nutrients and dry conditions, dill grows like a weed. I guess it's appropriate that they call it's frilly leaves dillweed. Dill will perform for you and return year after year if you leave a few plants behind in the fall to drop their seeds. All you need during the growing season, is full sun and good drainage.

The tall varieties, grown for their large umbel shaped seed heads used in pickling, look very impressive in the back of the herb garden or flower border. I like to grow it amongst the cabbage to ward off cabbage moths. The shorter, shrubbier varieties, grown for their abundant dillweed, are great for container gardening just outside the kitchen door, when your garden is quite a ways from the house. I tend to use my herbs more often if they're near the house. My favorites find a home right by my back steps in pots. Basil, fennel, parsley, dill and garlic chives all were handy this summer and got snipped for sandwiches, salads and quick last minute additions to the evening meal.

Dill is very versatile in the kitchen. It lends a nice flavor to seafood dishes, cream cheese spreads, cottage cheese, and leafy vegetables. Chopped dillweed sprinkled over fish chowder adds a nice flavor. I've used dillseed



in pickling cukes, green tomatoes and green beans, all with good results. It can also be used in breads and apple deserts.

The word dill comes from the Norse word *dilla*, or the Anglo-Saxon word *dylle*, both meaning to lull or soothe. This is appropriate since dill has been used as a carminative to soothe cramping due to digestive disorders or colic. Early settlers called dill, "The Meeting House Seed" because they gave it to children to chew during long sermons to stave off hunger and keep them calm. Dill water was known to be a remedy for nausea and stomach distress as well as insomnia.

Keeping dill over winter is simple. Due to the tiny leaf width it dries easily if spread in one layer in a basket and tossed daily to aerate. You can also use a dehydrator successfully for the dillweed. The seed heads can be dried by hanging them upside down in a brown paper bag with holes punched in the sides for good air circulation. This way the seeds fall right in the bag as they dry and you can just shake off any stragglers. I've included a favorite recipe for dilly green beans. Hope you like it.

Dilly Green Beans

Bring to a boil 2 1/2 quarts water, 2 1/2 quarts white vinegar, and 1/2 cup salt.

To each sterile pint jar add 1 clove garlic, 1 bunch of dillseed, and 1/2 teaspoon cayenne pepper. Add green beans, standing on end.

Pour hot brine over beans, cover and process 10 minutes in hot water bath.

Maddy Perron is a Master Gardener from New Boston with a special interest in herbs.



Revenue Insurance

Adjusted Gross Revenue or AGR is a relatively new crop insurance program developed by the USDA's Risk Management Agency. Since its 1999 inception, it has expanded to cover most counties in Northeast states, with coverage levels continuing to be evaluated and improved.

AGR is a whole farm type insurance that guarantees a percentage of an operation's gross revenue instead of guaranteeing a certain percentage of a crop. This differs from the conventional Multi-Peril Crop Insurance (MPCI) because it insures an operation's revenue against lack of production and market fluctuations, where MPCI only insured against lack of production.

AGR insures the whole farm operations revenue against loss of quantity and market fluctuations;

this includes many crops or commodities that may not have been insurable in your county before. AGR allowable income can come from many sources including bedding plants, greenhouse, and field grown or container nursery products.

The operation's gross revenue is based on the last 5 consecutive schedule F tax filings. There are several different coverage levels available, however the coverage levels available to each operation depends on the number and mix of commodities an operation produces. The more commodities a business produces, the higher coverage level the owner may be able to elect. These coverage levels vary from the lowest guaranteeing 65% of revenue with a 75% repayment rate to the highest guaranteeing 80% of revenue with a 90% repayment rate. For every dol-

lar an operation falls short of their 65 to 80 percent revenue guarantee that dollar will be paid back from 75 to 90 cents on the dollar.

For detailed information on the specifics of this or any of the other crop insurance programs please contact First Pioneer Farm Credit for the Crop Growers Insurance Services agent in your area. They will help you evaluate this program and others to fit a risk management program for your specific operation.

First Pioneer Farm Credit provides financial services to the green industry. Call the Bedford, NH branch office at 1-800-825-3252. (RW)



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WHY JOIN? Here are just a few of the many reasons:

TWILIGHT MEETINGS. A chance to visit horticultural operations around the state, talk with your colleagues, and see how another business solves the same problems you have.

SUMMER TRADE SHOW. Our big event! An opportunity to meet directly with your suppliers, make new contacts, and enjoy a great barbecue.

THE PLANTSMAN. The best horticultural association publication in the Northeast. Free with every paid membership. Helps keep you up to date on our industry events, news, and legislation, along with timely articles for better business management.

CLOUT. The more members, the more clout we'll have on the political front in Concord. In 1999 we helped pass legislation that allows non-permanent structures (hoop houses) a tax-exempt status.

Membership Application

Please complete the information below.

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Would you be willing to serve on a NHPGA Committee? Yes No

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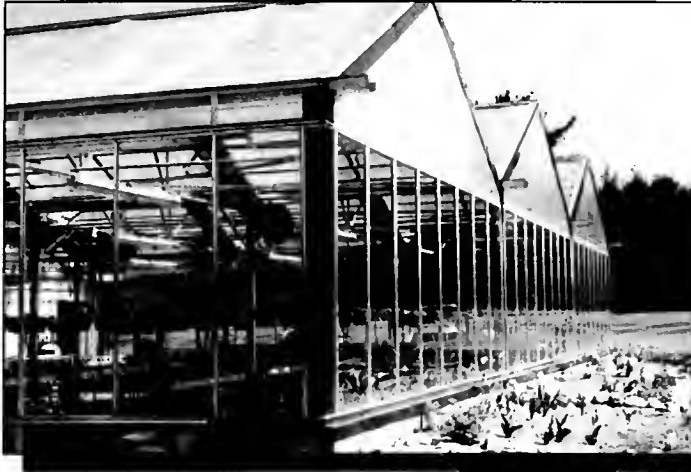
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- Companies with 11-20 full-time employees \$125
- Companies with 21 or more full-time employees \$150
- Associate Membership \$100
- Student Membership \$15
- Employee of Member Company (can be mailed to your home) for \$15
- Senior Rate (60 + years) \$50

I hereby apply for membership and agree to abide by the by-laws established by the New Hampshire Plant Growers' Association.

Signature _____ Date _____

Please send application and check to: New Hampshire Plant Growers Association, 5 Birch Tree Lane, Bow, NH 03304

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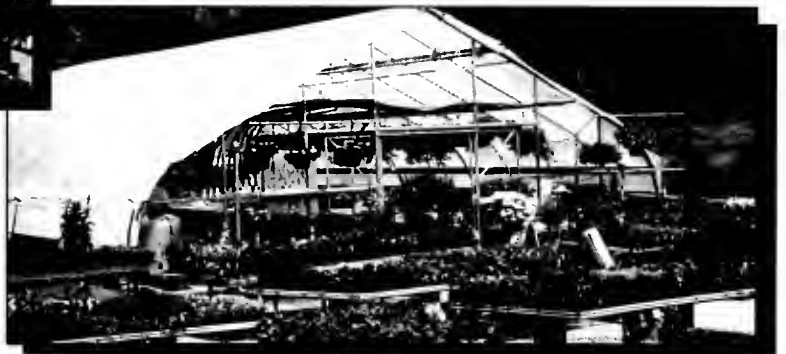
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John McPhail of Gold Star Sod Farm & Nursery Inc. in Canterbury, NH is the newest member to join the NHPGA Board of Directors. The Board of Directors work year round on behalf of the membership to plan educational programs and promotional activities. Directors who serve on the legislative committee follow events at the state house. John has agreed to serve as chairman of this busy committee. Look for legislative updates on the website at www.nhplantgrowers.org and in upcoming issues of *The Plantsman*.

The Board hears input on a regular basis from other standing committees. The committees focus on membership, programs, or marketing and promotion. Participation is encouraged to assist the board members with their efforts in these areas. Contact Ginny Hast, Executive Director, or a board member to identify how to lend a hand.

In future issues of *The Plantsman* look for details of the summer meeting which will be held at Pleasant View Gardens. This year, New England Nursery Association will hold their summer meeting in conjunction with the NHPGA summer meeting. NENA will also have the updated green industry survey available at this meeting.

THE PLANTSMAN EDITOR
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