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1 May

# the *Plantsman*



*...and  
then there  
are lilacs.  
See page  
fifteen.*

APRIL & MAY 1994

NEW HAMPSHIRE PLANT GROWERS ASSOCIATION





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# *the Plantsman*



*...and  
then there  
are lilacs.  
See page  
fifteen.*



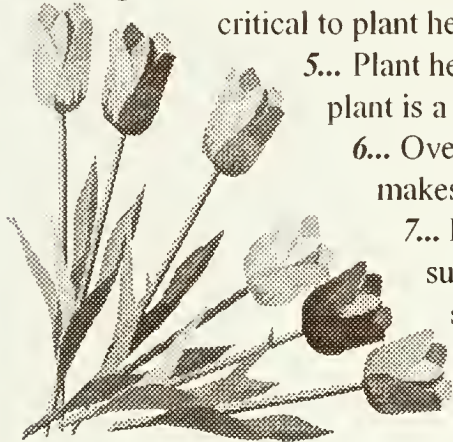
APRIL & MAY 1994

NEW HAMPSHIRE PLANT GROWERS ASSOCIATION

# If You Grow..., You Should Know...

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- 1... Every time you use a chemical (pesticides **and** fertilizers) you will reduce your production amount by approximately 1%.
- 2... Chemical pesticide use is slowly destroying our environment.
- 3... Everyday, more and more people are showing concern. This concern results in stiffening government regulations.
- 4... The potassium derivative, *miriate of potash*, found in most chemical fertilizers (and in some "organic" ones too), destroys many *essential* soilborne microorganisms and bacteria which are critical to plant health and soil fitness.



- 5... Plant health plays a critical role in pest and disease control because a sickly plant is a susceptible plant.
- 6... Over fertilization is easy to do when using chemical fertilizers. This too, makes plants sickly, and thusly, susceptible to pests and diseases.
- 7... Every time you spray plant pests with a chemical pesticide, some will survive. Through *genetic mutation*, those survivors will produce offspring which have slightly higher resistance, to the last chemical used, than their forebears.
- 8... Chemical fertilizers offer *nothing* in the way of long term value.

9... It's *impossible* to control Mother Nature.

10... The latest agricultural technology provides solutions to the problems that today's growers face by better understanding nature and utilizing that understanding.

11... Natural practices are *less expensive* in the long run and offer an *immediate* savings in labor.

12... The big guys can do it. (Gallo, Dole, Paramount, Pandol & Sons and many more.) So can you.

13... There's no better time than right now to change your ways. (It's recommended that you make the transition thoroughly, with commitment, to only a small section of your operation at a time.)

14... There's a New Hampshire company that can help you understand and switch to their *sustainable* practices. This company has the knowledge and the products you'll need.


15... To take the first step, contact the **The Green Spot** today. By doing so you can get thier **FREE Green Methods™ Catalog**. There's *no obligation* and it's *chock full of valuable information*.



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**The Green Spot**

Department of Bio-Ingenuity

93 Priest Road, Barrington, New Hampshire 03825 ... 603-942-8925 

**April**

APRIL 28 *New Hampshire Plant Growers' Association (NHPGA) Twilight Meeting*, 5:30-7:30, Northern Nurseries, Barrington, NH; for information: Bob Averell at (603) 868-7172.

APRIL 28-MAY 1 *Third Annual New Hampshire Orchid Society Show*, (AOS approved), Bedford Mall, Bedford, NH; for information: (603) 654-5070.

**May**

MAY 13 *New Hampshire State FFA Competitions*, University of New Hampshire, Durham, NH; for information: Dave Howell at (603) 862-1760.

**June**

JUNE 9-11 *International Lilac Society Meeting*, University of New Hampshire, Durham, NH; for information: Owen Rogers at (603) 862-3222.

JUNE 16 *NHPGA Twilight Meeting*, D. S. Cole Growers, Loudon, NH; 6-8 PM; for information: Doug Cole at (603) 783-9561.

JUNE 17 *Maine Landscape & Nursery Association Twilight Meeting (South)*, 4 pm, at Tidebrook in Freeport; for information: (207) 225-3998.

JUNE 19 *New England Rose Society Lecture and Tour*, Lowe's Own Root Roses, Nashua, NH; for information: Mike Lowe at (603) 888-2214.

JUNE 21 *Maine Landscape & Nursery Association Twilight Meeting (North)*, The Growing Concern, Orono; for information: Claire Ackroyd at (207) 866-3448.

JUNE 25 *New Hampshire Rose Society Annual Show*, Barton Hall, UNH, Durham, NH; for information: Bill Prince at (603) 868-9610.

**July**

JULY 9-13 *International Floriculture Industry Short Course*, Cincinnati, Ohio; for more: (614) 487-1117.

JULY 12-15 *AAN Convention*, Baltimore, MD; (202) 789-2900.

JULY 14-16 *MANTS*, Baltimore, MD; (301) 256-6474.

JULY 26-28 *PANTS*, King of Prussia, PA; (717) 238-1673.

JULY 13-14 *New England Ag Expo*, Tunbridge Fairgrounds, Tunbridge VT; for information: 1-800-653-2700.

JULY 20 *Connecticut Nurserymen's Association Summer Meeting*, co-sponsored by Young's Nursery and Planter's Choice Nursery, Newtown, CN; for information: (203) 872-2095.

**August**

AUGUST 10 *NENA Summer Meeting*, Aqua Turf, Southington, CT; for information: (617) 431-1595.

AUGUST 17 *NHPGA Summer Meeting*, Ledgewood Farm, Moulton-boro, NH; co-hosted by Spider Web Gardens, Center Tuftonboro; for information: Chris Robarge at (603) 862-1074.

AUGUST 17 *Rhode Island Nurserymen's Association Summer Meeting*, Blithewood, Bristol, RI; for information: (508) 761-9260.

AUGUST 26-SEPTEMBER 3 *Professional Plant Growers Association (PPGA) Technical Tour of Denmark*; for information: 1-800-647-PPGA.

**September**

SEPTEMBER 14 *NHPGA Twilight Meeting*, 5:30-7:30, Gateway Gardens, 430 Loudon Road, Concord, NH; for information: Kirk Weyant and Sue Englund at (603) 229-0655.

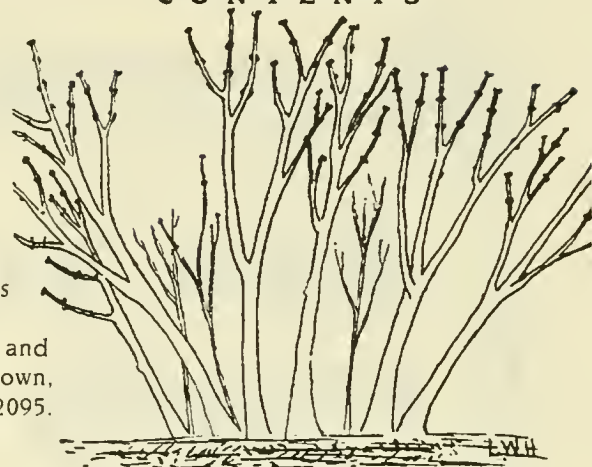
SEPTEMBER 22-27 *27th International PPGA Conference and Trade Show*, Buffalo, NY; for more: 1-800-647-PPGA.

**October**

OCTOBER 17-19 *New England Greenhouse Conference*, Sheraton Sturbridge Inn, Sturbridge, MA; for information: Henry Huntington at (603) 435-8361.

**November**

NOVEMBER 12 *Rhode Island Nurserymen's Association 75th Birthday Celebration*, Doubletree Inn, Newport, RI; for information: (508) 761-9260.



Winter outline of a properly pruned lilac.

**FORUM 3**

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The *Plantsman* is published in early February, April, June, August, October, and December with copy deadlines being 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*.

AD SIZE	6x	1x
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For further information, please contact the editor: Robert Parker at the UNH Research Greenhouses, Durham, NH 03824, (603) 862-2061; or PO Box 5, Newfields, NH 03856, (603) 778-8353.

COVER: "Mme. Florent Stepman" (*Horticulture*, 1940), from the Edward A. Upton Scrapbooks of Lilac Information, Collection of the International Lilac Society. All lilac illustrations in this issue are from the Upton scrapbooks.



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**A Reminder**

If your mailing label has a "V" marked on it, our records show your 1994 dues have not been renewed. Please take a moment to send it along before the busy season starts. Thank you.

**Thanks**

THANKS go to the people who worked at the NHPGA booth at Farm & Forest: to Roger Warren, who wrote and was in charge of production of the three fliers; to Bob Demers and Chris Robarge, for setting up and dismantling the booth; to the Huntingtons for plant material. A large number of people attended this year's event and the attractive presentation was definitely worth the effort.

**Available:**

**A Publication:**

*Selecting Trees for Urban Landscape Ecosystems: Hardy Species for Northern New England*, a publication from the NH State Division of Forests and Lands, is now available.

Compiled and written by Mary K. Reynolds, Urban Forester, and Raymond M. Boiven, Regional Forester, this book gathers information on over 150 cold-tolerant trees—both native and exotic—appropriate to New Hampshire's climate and should be useful to landscapers and operators of both wholesale nurseries and retail garden centers.

This book is initially available at no cost and can be obtained by writing Mary Reynolds at the NH Department of Resources & Economic Development, Division of Forests & Lands, 172 Pembroke Rd, PO Box 856, Concord, NH 03301.

**Training Videos:**

Four 120-minute videos designed to supplement the Pesticide Applicator Training Manual have been taped, edited, and printed and are available for loan (for a returnable deposit of \$5.) at all county extension offices. There are also tapes available for each of the categories.

Taping has been going on over the last three months in the Channel 11 Studios in Durham.

All this seems like a lot of view-

W

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• • •

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North Hampton, NH 03862

Mink Brook Farm  
939 Circuit Road  
Hanover, NH 02339

North Hill Nursery Outlet  
206 Lafayette Rd  
North Hampton, NH 03862

Vandenberg Bulbs  
60 Keary Road  
Berwick, ME 03901

ing, but a lot of material is covered—topics such as worker protection and ground water protection are included. Faye Cragin, an administrative secretary in the UNH Entomology Department who's been involved in coordinating this project, says, "the idea is to allow

anyone applying for a license to do the work on their own and at their own pace. Day-long meetings at which too much material is given in too short a time are over."

Also, Faye mentioned that, because of time constraints, recertification credits being offered are no longer listed in *The Weekly Market Bulletin*. If you wish to know what's available and when, call your county extension office or the Department of Agriculture (603-271-3350).

**Pesticide Safety Poster.**

From *Weekly Market Bulletin*, 2/9/94  
Actions that can be taken to reduce the risks of pesticide-related illness or injury are illustrated on an instructional safety poster from the Environmental Protection Agency (EPA) now available for sale from the Superintendent of Documents.

This four-color poster shows nine agricultural scenes that illustrate such topics as proper work clothing, preventing pesticides from entering the body, what to do when exposed to pesticides, decontamination, and emergency care. Text is in both English and Spanish.

At the bottom of each poster is a space for emergency contact information and telephone numbers.

To order, indicate stock number 055-000-00444-7 and include payment of \$1.50 per copy (check or money order should be made payable to the Superintendent of Documents) and send to Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954. Price includes shipping & handling.

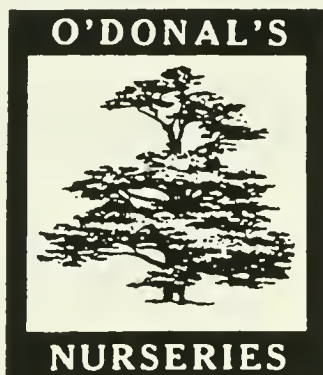
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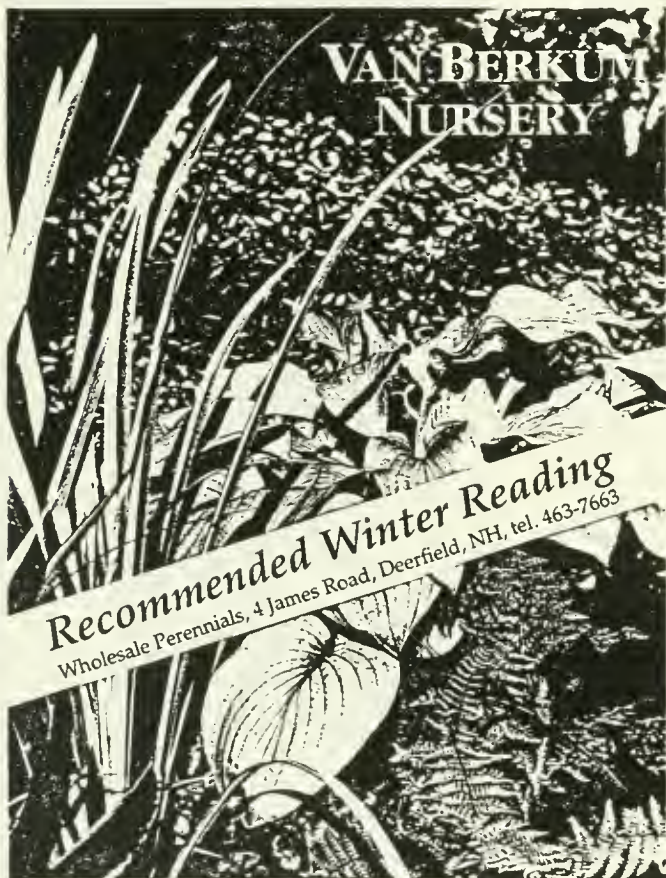
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## Are We Killing Our Own Business?

Robert E. Demers, Jr.

Every year EVERYONE hopes for a good spring. It's a garden center's favorite time. You can sell almost anything because you have good traffic flow. As spring moves along, you're out straight, working crazy hours and trying to maintain a halfway decent home life. The biggest day is Memorial Day or the day of your annual open house.

But what about after that? You're tired, maybe even burnt-out; customer traffic has slowed and you think you might be left with merchandise you can't get rid of—so what do you do? You put it on sale for 50% off, clear off the benches, and start gearing down for summer.

Are we killing our own business? Did you ever sit back and think that you can have a summer business of annuals and perennials that's just as good as your bedding plant business in spring? You could! It will take effort over a few years to build it up and get your customers used to what you have to offer.

Liquidating your plant material in June is bad business all the way around. You stop buying from wholesalers and they stop growing the items. (You can't blame them—they need to maintain a certain sales level to justify growing that plant.)

When a customer comes along and sees that your benches are starting to empty, what do you suppose is going through that customer's mind? I know what I'd be thinking: 'I'd be thinking that you were finished for the season and that I'd better go somewhere else. (By the way, we sell geraniums through mid-July.)

Put yourself in your customer's shoes and ask yourself, "Am I killing my own business?" Drive into your parking lot, get out of your car, walk into your place and see

it from your customer's eyes. Are empty shelves and benches appealing? No, they are not!

Each year my June business gets better and better. Why? Because I don't have routine sales on my flowers and shrubs. Yes—I do have sales, but I don't liquidate my plants. I wait on the annual-pacs until it gets hot and I have to water them more than twice a day—then my sale is simple: buy ten; get five free.

**LIQUIDATING YOUR  
PLANT MATERIAL IN JUNE  
IS BAD BUSINESS  
ALL THE WAY AROUND.**

I hate empty benches. I keep all my benches in the retail area full. Customers don't think I'm done for the season; I try to impress them with masses of color so they'll be sure to tell friends what they saw.

When it gets hot and watering is a problem, we push jumbo annuals in 6 1/2- and 8-inch pots and as many heat-tolerant hanging baskets as we can get. You'd be surprised what will sell in June and July if it looks good and is in flower. There are plenty of impatient people out there who want the largest plant in the shortest amount of time and we sell lots of one-, two-, and three-gallon perennials. (Most of these take only one watering a day.)

We also have a dozen whiskey barrels cut in half and filled with plants set up around the sales area. These get customers excited about doing something in their own yards.

With this recession, a lot of people won't chance a May frost, but will wait until June before buying plants. If they know you're still

carrying the material, they'll come back when they're ready. If a customer comes to my place in June or July, you can rest assured he'll have a few thousand to choose from.

Don't let the trade stores take what's rightfully yours. You are a Garden Center—make sure your customers know this. Make sure no matter what month it is, your benches are full. It will take awhile for your customers to learn that material will be there, but once they do that, they'll come to you first. We have a lot of summer customers who may, for example, be planning a special event and want colorful plants to brighten up their deck or patio.

Not a day goes by that I don't hear something about the discount stores. Don't just give your business to these people. They're not stupid—if you're willing to give it to them, of course they'll take it. But don't give up before you start. Find your niche; do and grow things they can't. Provide services they don't offer. Make your business look like it's going to be around awhile. Paint your buildings—maybe with a bold new color; build a new greenhouse or fix up the old one. Give your customers something to talk about—if things change, customers will come more often to see what's new.

I know it's hard to break rules from the old school, but it can be done. Don't think sales stop after Memorial Day because they always have. Trends change; people change—and if I can get my 63-year-old Dad to use a fax machine (those of you who know him know that could be quite a task), you can get your customers to buy plants in the summer.

*Bob is at Demers Nursery & Garden Center, 656 South Mammoth Road, Manchester, NH 03103. He can be reached at (603) 625-8298.*

**New to New Hampshire:  
Perma-Wood**

"The Maintenance-free Solution" is what Ed Lambert calls Perma-Wood, a lumber substitute made from recycled plastics that he and his partner Bob Beaudet are introducing to New Hampshire.

Perma-Wood is made from everyday recycled plastic—first ground into chips, then put through an extruder which shapes it into useable building materials of various sizes and colors. Some pieces are hollow; some have texture—there are different grades.

The material can be sawed, nailed, etc., with ordinary tools.

Initially more expensive, savings are promised in lower maintenance and indestructibility—it can be used in place of railroad ties in the landscape, or pressure-treated wood in a deck, or inexpensive planking for soil storage. And you're helping the environment by using up some of the plastic every-

one has so dutifully recycled.

Looking for a market niche in a state with a lot of trees, Ed initially felt people would like decks made of this—"People build an elegant house," Ed says, "then they put up a deck of pressure-treated wood. They say they want it to look 'natural,' but do they say that because they mean it or because there are no other options? Perma-Wood offers options."

Some decks have been built, but the real interest seems to be from municipalities looking for a material other than wood to use for rebuilding park benches.

Although they currently act as brokers for other manufacturers of Perma-Wood, Ed and Bob hope to set up their own extruder and use some of the plastics recycled in New Hampshire to manufacture on their own.

For information, write Perma-Wood at 145 Lakeside Drive, Manchester, NH 03104 or call 603-623-7655.

**Humbug Manufacturing**

Humbug—that's the name. The product is a mini-greenhouse for the avid home gardener's spring seedlings.

Michael Scott got the idea last year while repairing a cold frame. It was bulky; the damp wood was weak; a pane of glass had broken. He decided to build a new one—but a lot of time was involved...he worried about his children falling into the glass...one thing led to another: he ended up with Humbug.

The mini-greenhouse Mike manufactures is light (an aluminum frame, with lexon ends and 6-mil poly covering—a total of 12 pounds) and small (48x24 and 24 inches high), but large enough to hold 190 starter pots. The poly rolls up to allow venting; holes in the base are for spikes to hold the frame to the ground; a plexiglass floor is optional.

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**Agricultural Commercial Industrial  
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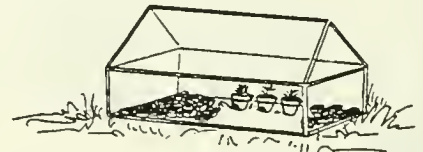


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*Throw away that unsightly and inefficient cold  
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The Humbug Mini Green House is an attractive addition to any yard or deck. It is constructed of lightweight aluminum frame with clear lexon ends to provide rigid support and comes with a greenhouse quality 6 mil polyethylene cover for easy access to your plants.

- ⊗ Can be set directly on the ground, deck, or patio.
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- ⊗ Accommodates 190 starter pots
- ⊗ Weighs only 12 Lbs.
- ⊗ Dimensions are 48" L x 24" W x 24" H



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landscape, it comes to the buyer in seven parts—five frame pieces, two completed ends—to be connected with plastic push bolts.

Mike sees a market for the Humbug Mini-Greenhouse among people like him and his wife who want an early start on their gardening. He hopes to sell it through area retail garden centers. For information, contact Michael Scott at Humbug Manufacturing Company, PO Box 541, North Hampton, NH 03862. The phone number is 603-964-1115.

### Gateway Gardens

A new garden center has risen outside Concord. Gateway Gardens, co-owned and operated by Kirk Weyant and Sue Englund, both familiar to the New Hampshire green industry, will open for business in late April and have its official Grand Opening on Mothers' Day.

The first customers will see two Rough Brothers houses (30x80 and 30x70), one connected to a 40x70 barn.

One house is full (on March first) of geraniums, impatiences, and some "jumbo mixed hangers." More plants will follow—Kirk and Sue plan to have a broad selection (over 300 types) of perennials and 150 types of herbs, as well as nursery stock.

The big barn—35 feet to the peak, with 13-foot-wide doors at either end—will be "filled with everything from dried flowers to books to tools;" there will be a children's section.

There's parking for 30 cars ("that's on pavement; there's plenty more room on the grass.") and Kirk feels Gateway Garden's location and wide range of products will fill the spaces.

Gateway Gardens, 430 Loudon Road, Concord, is located on Route 9 about a half-mile from where it turns off from Route 393/4/202. The phone number is 603-229-0655.

### Legislative Update

The bills concerned with pesticides and pesticide control board



### HOW ABOUT HERBS

Not every gardener has a sunny space for herbs, so customers may sometimes ask for herbs that do well in the shade.

**ANGELICA** (*Angelica archangelica*) is the first that comes to mind. An imposing three-to-five foot presence, with large flower umbels, it's considered a biennial, but will live for three or four years if not allowed to set seed. If it does set seed and conditions are right, small seedlings will quickly appear.

**BEE BALM** (*Monarda didyma*) is a perennial that likes partial shade and moist rich soil. It needs good air circulation. Bees and hummingbirds love it; the leaves make a nice tea and the flowers are edible as well.

**CHERVAL** (*Anthriscus cerefolium*) is a hardy annual with dainty fern-like foliage and tiny white flowers. It prefers moist, rich, well-drained soil in partial shade or dappled sunlight. Leaves have a delicate anise flavor.

**LEMON BALM** (*Melissa officinalis*) will adapt to shade. It will grow as a less compact plant, but its flavor will still be a refreshing minty lemon.

**LOVAGE** (*Levisticum officinale*) looks and smells like an overgrown celery plant. It will do well in partial shade with plenty of moisture and good (and preferably well-limed) soil. It can grow up to seven feet and is a fine substitute for celery in cooking.

**SWEET CICELY** (*Myrrhis odorata*) is an excellent shade plant with leaves like ferns and umbels of white flowers followed by bright green seeds. It can take full shade and the anise-flavored leaves, stems, seeds, and roots are all good to eat.

**SWEET WOODRUFF** (*Galium odoratum*), with its whorls of slender leaves and white flowers held high, is a good ground cover. It's a key ingredient of old-time May wine and, when dried, smells like new-mown hay. It likes partial shade and rich, moist, acidic soil.

The shade gardener should avoid the deepest shade (under heavy tree cover or in building shadows where the sun is blocked all day). The herbs mentioned here do need more light than you would find, for example, in woods or under large lawn trees. Your customer, with the shady garden may need a little more help and advice, but is just as eager to grow herbs as the gardener who grows in the sun.

Tanya Jackson, a well-known area herbalist, can be reached at 603-431-6774.

seem to be at various points in legislative process. House Bill 1185, allowing the pesticide board to establish a fee for services, will probably pass; House Bills 1512-FN and 1533, enlarging the membership of the Board and adding a

citizens' advisory committee, will probably be modified and combined into one proposal; repeal of last session's bill preempting local regulation of pesticide use will probably not happen.

Two bills dealing with Workers'

**ASSOCIATION OFFICERS***President*

**BOB DEMERS, JR.**  
Demers Nursery & Garden Center  
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pensation premiums" (both descriptions from *NFIB Bulletin*).

For more information, contact Bill Stockman, Spider Web Gardens, at (603) 569-5056 or Joan LaPlante, National Federation of Independent Business/New Hampshire, 4 Park Street, Suite 216, Concord, NH 03301, at (603) 228-3477.

**Showtime '94**

The "New Look" succeeded—the 1994 Farm & Forest Exposition held in Manchester on February 3-5 was described as "the busiest, the most successful ever." Attendance was up, meeting rooms were filled to overflowing, and exhibitors are signing up for next year.



So public interest is lively. With that in mind, one looks forward to the New Hampshire Orchid Society Show at the Bedford Mall on April 29-May first. Although smaller than Farm & Forest and more specialized, there's plenty for everyone—orchid enthusiast to curious shopper—to see. There'll be at least 30 orchid displays; the fifteen vendors signed up at the end of February include Carol Woodin, an artist who does botanical illustrations for the American Orchid Society, who'll be displaying and selling her watercolors. Two local growers, Sawyer's (Grafton, NH) and Mountain Orchids (Ludlow, VT), will be both showing and selling; a representative from Siam Orchids, the American branch (based in Texas) of Udam Orchids of Bangkok, Thai-

land, will be there as well. Judging and a preview party with hors d'oeuvres and maybe music (7 pm; \$15 per person) are on the 28th. On Saturday, April 30, WFAE will be broadcasting live from the show for six hours, interspersing its music with interviews of both exhibitors and visitors. Plants and cut flowers will be for sale; there'll be door prizes, audiovisual presentations, talks and demonstrations by FTD, Teleflora, and members of the various societies exhibiting...it sounds like quite a time. For more: Joanna Eckstrom at (603) 654-5070.



For those who like a more low-key afternoon, the New Hampshire Rose Society will hold its annual Summer Show at Barton Hall at UNH in Durham on June 25. Basically, any amateur rose grower is welcome to bring a blossom he's grown to Barton Hall between seven and ten in the morning—tables and vases are provided; judging (by judges from as far away as Connecticut and New York) takes place from 11 until one; the show is open to the public from one until four. Cut flowers and miniature rose bushes are for sale. For details: Bill Prince at (603) 868-9610.



"It is with deepest regret," a January 27 memorandum from the Portsmouth Regional Visiting Nurses Association said, "that we inform you that the Eight Annual Seacoast Area Flower and Landscape Show scheduled for March, 1994, has been canceled."

It seems illogical, but in a region with a sizable tourism industry, as well as a large number of vacant commercial properties, no suitable exhibition space was found.

However, a meeting has been called "to see where we go from here." For information, contact Brenda Schure at (603)436-0815.

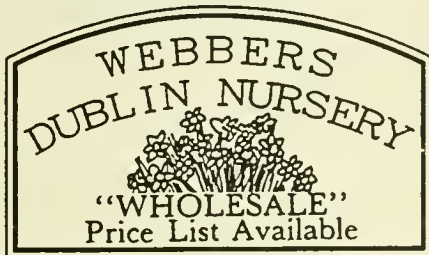
Compensation may be of interest to readers. House Bill 1508 "declares that an employer with no workers' compensation claims for two years and a good safety record shall not be charged a premium for being part of the assigned risk pool. This bill also establishes a workers' compensation rate study." Senate Bill 546 "limits attorneys' fees on lump sum payments under workers' compensation to eight percent of the lump sum. If passed, members could experience a sizeable savings on workers' com-



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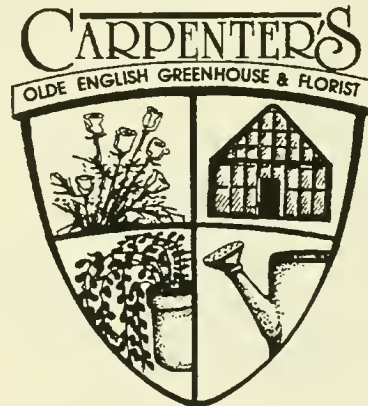
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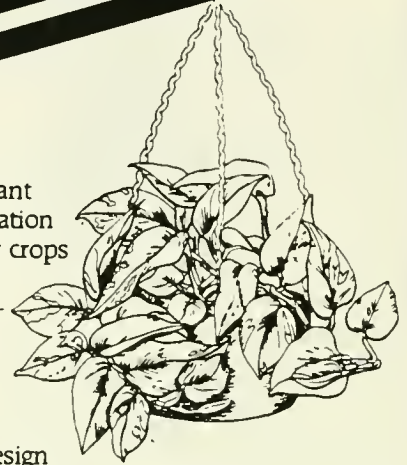
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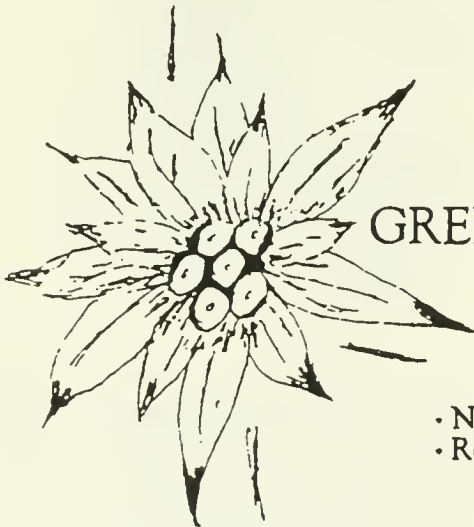


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**The First Annual....**

Shows falter, but new shows rise to take their place. The newest is in Vermont, at Tunbidge Fairgrounds, about 20 miles up Route 1-89 from White River Junction.

The New England Ag Expo, to be held on July 13-14, is farm-oriented, with a dairy auction, antique equipment exhibit, plowing demonstrations....

But "farm" can define a nursery or cut-flower operation—and with 40,000 square feet of outside exhibition area and 16,000 of inside, lots of suppliers of products, equipment, and services should be there. There will also be a variety of informational seminars.

Sponsored by *Country Folks* and *Country Folks Grower*, co-sponsored by the Vermont Department of Agriculture, endorsed by the New Hampshire Department of Agriculture, this is being called "The Summer Farm Show for New England."

For more: 1-800-653-2700.

**UMass Extension IPM Workshop Series**

University of Massachusetts Cooperative Extension is sponsoring a new IPM Workshop Series. The first workshop is a 5-7 pm Twilight Meeting entitled "Scouting for Pests and Problems in the Landscape" which will be held in Waltham on April 27, June 1, and July 27, in Sandwich on May 17, and in Amherst on June 9. The workshop will focus on the concept of key plants and their pests, then the monitoring of these plants. "Two contact hours offered for categories 36 and 37 for Pesticide Applicator's License." (You may want to find out how this translates into credits toward your own state's license.) Registration fee is \$30.00.

The second workshop, "Beneficial Insects and Mites at Work," will be held from 2-6 pm in Amherst on June 23, in Waltham on July 13, and in Wareham on July 14. In this, predator-prey and parasite-host relationships are examined. Three contact hours are offered and the

\$45.00 fee includes the purchase of the manual, *Biological Control of Insect and Mite Pests of Woody Landscape Plants*.

To register, send check (payable to UMass) to IPM Workshops. UMass Cooperative Extension, French Hall, Box 32910, Amherst, MA 01003-2910. For additional information, contact Kathleen Carroll at (413) 545-0895.

**New England Greenhouse Conference 1994 Awards Recommendations**

Ten proposals submitted to the 1994 New England Greenhouse Conference Committee have been recommended for funding. These are:

"PH Adjustment in Commercial Soilless Media," O. Elliot, (\$2000), The Implementation of IPM practices for Greenhouse Growers, L. Fundt, (\$2000); "Factors Affecting the Development of Bract Necrosis in Poinsettias," R. McAvoy, (\$2000; all—University of Connecticut;

"A Comprehensive Analysis of Weed Management in Specialty Cut Flowers, D. Chapin, (\$1170); "Manipulation of Light Quality and Intensity to Enhance Control of Western Flower Thrips," P. Stack, (\$1200); both—University of Maine;

"Evaluation of Composts for Greenhouse Use," D. Cox, (\$2000); "Factors Affecting the Development of Phytotoxicity on Plants Treated with Horticultural Oils," S. Han, (\$2000); "Plant Pathogenic Fungi Associated with Fungus Gnats and Shore Flies," R. Wick, (\$2000); all—University of Massachusetts;

"Ornamental Grass Hardiness," L. Perry, (\$1500), University of Vermont; and "Inexpensive Method of Expanding the Headers on a Drip Irrigation System," M. Lyndon, Lyndon Family Tomatoes, (\$1000).

(The Board is open to project proposals from everyone in the industry—private operators as well as members of research and educational institutions. For information, contact one of the board members from your state.)

**TIPS**

from the Griffin Guru



1994

**A Heating Season to Forget**

Before we forget what a harsh heating season we've just been through (and are still recovering from), we should take a moment to make a note about the heating equipment we own.

Unlike vehicles with an odometer to remind us when it's time to think about replacing them, our furnaces and heaters need us to remind ourselves that they are subject to wear.

Not long ago we checked out the heating system in our facility's warehouse and discovered rust and rot that made us realize how old some of the unit heaters were. Seeing proof that nothing lasts forever, we decided to budget a replacement program. (One benefit from our decision is the higher efficiency of the new unit.)

A winter to forget. Don't let it come back to haunt you.

**Seattle Mercantile Exchange—A Commodity Exchange for the Nursery Industry**

For more than a century, the Chicago Board of Trade and approximately eight regional commodity exchanges have traded contracts on agricultural products ranging from coffee to soy beans. Even cotton has its own exchange. Now one more commodity has been added to the list.

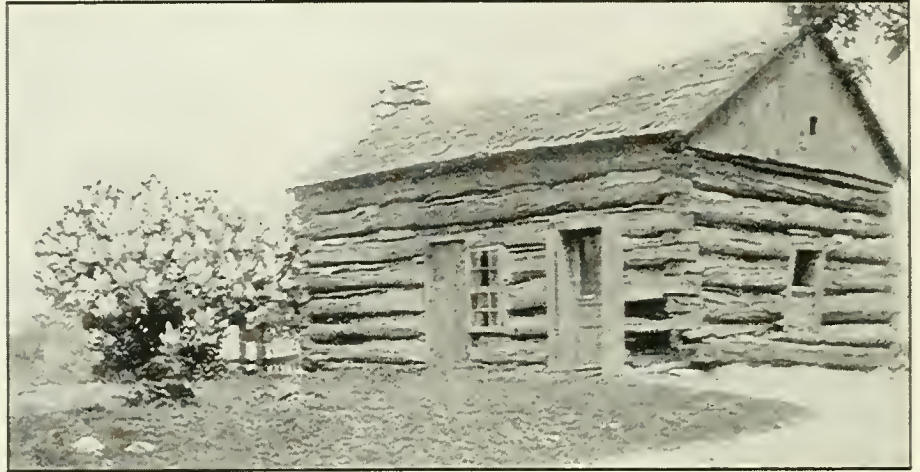
Seattle Mercantile Exchange (SME), formed exclusively for the

nursery industry, trades options and forward contracts on select nursery material. Seattle was selected for the exchange site because of the amount of nursery material produced in the Pacific Northwest; SME does, however, accept material from all growing regions. Using a national network of member brokerage offices, SME trades contracts on a pool of nursery material supplied by various growers. Orders to buy or sell contracts are generated by the brokerage firms that are linked directly to the exchange's trading system in Chicago.

Seattle Mercantile Exchange can offer advantages to nursery professionals. These may include: "help in anticipating planning requirements; the ability to secure material potentially below cash market; allowances for gains on future value; the capability to accommodate buyers' cash position; the power to exceed cost plus returns; price-risk management; potential market liquidity; elimination of the need to inventory material (carrying charges); guaranteed quality and grade of material; low cash requirements to secure material rights."

"It's SME's and brokers' objective to educate the industry on how to use it effectively," a SME spokesman says. To assist in this endeavor, which includes seminars conducted by SME, John Wiley & Son Publishing Company (known for its books on finance, particularly on stock and commodity trading), will release in fall, 1994, a text on how to trade on the exchange.

Also, SME offers a comprehensive supply of reference materials. If you would like precise information on exactly how the exchange works and the name of the brokerage firm in your area, telephone 1-800-888-2028 and ask for a free publication, *Access to the Market—an Introduction to Seattle Mercantile Exchange*.



Long since deserted—yet the Lilac blooms on.

**A Sampling of Science Presentations at the 1993 Annual Meeting of the American Chestnut Foundation (ACF) in Meadowview, Virginia**

(from *The Bark*, the newsletter of the ACF, November/December, 1993)

"...University of Georgia doctoral candidate Dan Carroway presented the results of genetic work under the direction of Dr. Scott Merkle, which is also partly funded by ACF. They are devising a method for introducing genes into chestnut cells from which trees will be regenerated. The method of regenerating trees is called somatic embryogenesis, whereby individual chestnut cells cultured in test tubes are induced to develop similar to the way sexual embryos develop in nuts. The test tube embryos are called "somatic" because they do not develop from cells involved with sexual reproduction in flowers, but from non-sexual, or "somatic" tissue....these methods will be extremely valuable in researching the genetics and molecular biology of chestnut trees and may be useful in developing pest-resistant trees, if suitable genes are identified..."

"...in the meantime, selected F-1s (1/2 American, 1/2 Chinese) have been intercrossed to make F-2s, and selected B-1s (3/4 American,

1/4 Chinese) intercrossed to make B-1/F-2s. The F-2s and B-1/F-2s are being tested for blight resistance at this time. Hebard announced that preliminary results indicate that some of the trees have high levels of resistance and that resistance is simply inherited, meaning that this is controlled only by a few genes (in this case, apparently two). This is very encouraging news. It indicates that the back-cross breeding program will indeed work..."

*The American Chestnut Foundation's sole goal is to restore the American chestnut through cooperative research and funding a scientific breeding program. For more information, write to the ACF at PO Box 4044, Bennington, VT 05201. The phone number is 802-447-0110.*

**New Address**

Nursery Supplies, Inc., supplier of plastic nursery containers, has completed the relocation of its Eastern operations to Chambersburg, PA. The new 189,000 square-foot facility is minutes away from Interstates 81 and 70, and less than a half hour from the Pennsylvania Turnpike.

The new address is Nursery Supplies, Inc., 1415 Orchard Drive, Chambersburg, PA 17201. The phone number is (717) 263-7780; fax, (717) 263-2412. The toll-free number, 800-523-8972, remains unchanged.



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# A Lilac?

## What do you mean?

Dr. Owen M. Rogers



TABLE 1  
COMMON LILAC CULTIVARS

'Rochester'	single white
'Maiden's Blush'	single pink
'Edith Cavell'	double white
'Mme Antonie Bucher'	double pink
'Agincourt Beauty'	single violet
'Mrs. Watson Webb'	single magenta
'Marechal Lannes'	double violet
'Paul Thirion'	double magenta
'Wedgewood Blue'	single blue
'Sensation'	single purple
'Olivier de Serres'	double blue
'Adelaide Dunbar'	double pink

ABOVE: Lilacs, flower print by Peirre Joseph Redoute, celebrated flower painter of France, 1759-1840.

There are lilacs and then there are lilacs. Ask anyone to describe a lilac and the answer would be something like, "It's the bush down by the barn" or "it's the flower we enjoy around Memorial Day." I won't argue with either of those descriptions. The Common Lilac *Syringa vulgaris* has been around in New England for a long time and is in bloom just before or just after Memorial Day, depending on where you live. The International Lilac Society lists nearly 1500 cultivars of *Syringa vulgaris*, so there can be no question about its importance. I do, however, question the list carried by many nurseries. Having plants listed only by color (such as purple, white and pink) does not do much as a boost for the flower that everyone knows. Even if the list includes named cultivars, they are usually the "French Hybrids" (i.e., the results of crosses made in France in the late 1800's). I'd like to see nurseries and other places that sell lilacs at least try some of the newer cultivars. How about focusing on ones developed in this country after 1900? We could call them the "American Hybrids". A fair selection of these cultivars is available in New Hampshire from at least some of the big wholesalers and, I bet, others would carry them if you asked. A very short list is included as Table 1.

Still, even if a person had all the *S. vulgaris* cultivars, they would still only have ten days of bloom. What about lilacs that bloom at other times? Plenty of them are available. How about some that bloom early, such as the species *Syringa oblata* that blooms ten days earlier than *S. vulgaris*? Or the hybrid group listed as *S. x hyacinthiflora*, with a long list of cultivars that bloom five days earlier than *S. vulgaris*? Then, after Memorial Day, there is a group (including *S. x chinensis*, *S. x persica* and *S. meyeri*) that blooms five days later. This is followed by *S. patula* 'Miss Kim' (introduced from the University of New Hampshire) ten days after the Common Lilac and *S. x josiflexa* cultivars (see Table 2) in an overlapping series that, with the cultivar 'Jesse Hepler', extend lilac bloom 15 to 20 days after the Common Lilac. The bloom period finally reaches its end with the Tree Lilac (*Syringa reticulata*) that blossoms a month after the *S. vulgaris*. I will admit that there are a few species (*S. meyeri* is one) that will have a few flowers in mid-August, but since those are at the expense of the following year's spring bloom, we won't add them to the bloom sequence list.

These other species and cultivars are also useful in the landscape because they add a considerable variation in plant size and shape, color, disease resistance, and fall foliage color. *Syringa x persica*, at one extreme, is small and delicate while *S. x josiflexa* 'Agnes Smith' is big and bold. *Syringa patula* 'Miss Kim' is slow growing and globular while *S. reticulata*, the Tree Lilac, is a tree growing to 30-40 feet with flowers that look quite different from the regular lilac flower.

One of the reasons given for not trying some of the new lilacs is MILDEW. I'll admit that mildew is one of the most visible problems on lilacs, for in the late summer, its white powdery film

can cover the leaves. Frequently its appearance coincides with damp weather, especially warm humid nights. The good news is that it is a superficial disease that will not harm a vigorous plant. The bad news is that tests in Washington, D.C., have shown that all lilacs can have mildew, but some are much more susceptible than others and the problem can result in an unsightly plant, especially if it is to be viewed up close. Further north in New England, the problem is not so severe and some very resistant forms are available. In general, the late blooming forms show the least susceptibility. None of the cultivars introduced from UNH ever have mildew in our climate and the disease is extremely rare on the Tree Lilac in any climate.

So, my advice to anyone interested in having a wider base of lilacs for use or for sale would be to split the genus into two groups, the *S. vulgaris* cultivars which everybody knows, and the other bloom dates types (see Table 2) which can really extend the time of bloom and offer a rich variety of plant form and foliage. Then, visit some of the large plantings to see specific cultivars. The two closest plantings are at the Arnold Arboretum (their Lilac Sunday is the Sunday closest to the 20th of May) and the Royal Botanical Gardens in Hamilton, Ontario, Canada. From such trips, a "short" list of types to fit your needs can be drawn up and this can be followed by a talk with your wholesaler to see which are readily available.

The results will be worth the effort. There is a whole range of lilacs out there which can expand your horizons and your business. There are lilacs and then there are LILACS. 🐉

Dr. Owen M. Rogers is Professor of Plant Biology at the University of New Hampshire. His address is Department of Plant Biology, Nesmith Hall, UNH, Durham, NH 03824; he is also a member of the International Lilac Society, which is holding its annual meeting at UNH on June 9-11. To find out more about this meeting should contact Owen at (603) 862-3222.

TABLE 2  
RANGE OF BLOOM

Illustrates the range of bloom available from other species and cultivars compared to *Syringa vulgaris*. Bloom time based on the common lilac.

**Earlier than *S. vulgaris***

<i>S. oblata</i>	_____	10 days
<i>S. x hyacinthiflora</i>	_____	cultivars, 5 days
'Mount Baker'	_____	single white
'Sister Justena'	_____	single white
'Pochontas'	_____	single violet
'Nakomis'	_____	single lilac
'Laurentian'	_____	single blue
'Esther Stanley'	_____	single pink
'Lewis Maddock'	_____	single pink
'Sunset'	_____	single magenta
'Purple Glory'	_____	single purple

**Later than *S. vulgaris***

<i>S. microphylla</i>	_____	5 days
<i>S. x persica</i>	_____	5 days
<i>S. julianae</i>	_____	5 days
<i>S. patula</i> , 'Miss Kim'	_____	10 days
<i>S. x prestoniae</i> and		
<i>S. josiflexa</i> cultivars	_____	10-15 days
'Agnes Smith'	_____	single white
'Isabella'	_____	single lilac
'Jesse Hepler'	_____	single pink
'Miss Canada'	_____	single magenta
'James Macfarlane'	_____	single pink
'Nellie Bean'	_____	single purple
<i>S. reticulata</i>	_____	30 days



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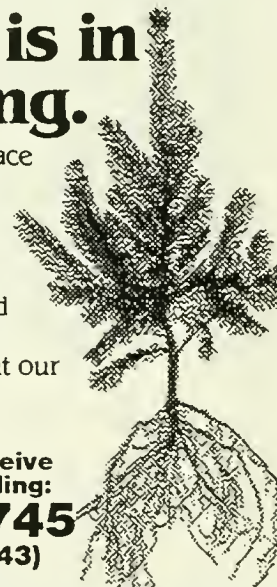
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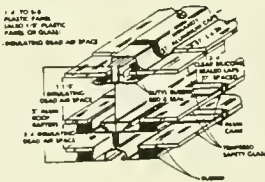
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# Apple Ridge

## A More Visible Future

**The First Impression** of Apple Ridge in Boscawen is the series of horizontals, each slightly higher than the other, rising behind the house—a line of greenhouses, then a hillside of apple trees, then a hillside of woods beyond that. And beyond the woods, a clear view of Mount Kearsarge.

Dave and Tina Larochelle moved here in 1977. "We had an farm in Deering," Tina says; "it was small—twenty acres, only five of it orchard. We both had full-time jobs and wanted to find a place big enough so that we could just farm."

At Apple Ridge, Dave and Tina and their son Mike have nearly 60 acres, 12-15 of them in orchard, most of the rest in woods.

There were orchards on the land long before the Larochelles bought it, but when they first came, what's now the big field of apple trees behind the house was three small fields of corn. In 1980, they removed the stone walls and planted 3000 semi-dwarf interstems—Macs, Macouns, Cortlands, Red Delicious...rows twenty feet apart of trees ten feet apart.

In 1982, they opened a small (26x30) farm stand and offered customers a chance to pick-their-own as well.

Stand size increased (it's now 40x34) as the Larochelles added other products—jams and jellies, pickles and pies. They built a 10x10 kitchen in which to make doughnuts to serve with cider to

pick-your-own customers. But the doughnut-making machine simply made too many—there was too much left over. Now the kitchen is used for making caramel apples.

Decorator pots and picnic baskets, Indian corn, dried flowers and statuary—these are some of the products sold.

Cooler size increased as production grew. The first cooler was an 8x10 bought from a farmer in Rumney; the second was a 10x20 wooden cooler out of the old First National in Concord. The third—the one they're using now—is a 16x30x14 walk-in designed by A and B Lumber in Concord. Dave describes it as "your basic cooler with insulation—something most farmers can build themselves." It can hold 3000 bushels and allows Apple Ridge to sell apples until Christmas.

After they built the cooler, they enclosed the space between it and the stand and created an area in which to press cider. The press is a 22-inch rack-and-cloth Palmer-type. Cider is pressed when needed; about 1000 gallons is made each season.

But in spite of all this, apples are seasonal—income is only for a couple months of the year. The Larochelles had set up a 14x32 Criterion near the stand and bought in bedding plants. These had sold well and they began growing their own. In 1982, they replaced the Criterion with a 25x45 Ovaltech,

which they built onto the side of the stand.

Delicious weren't selling ("they didn't look like Washington State") and some of the 800 Delicious trees were pulled out. Bedding plant and vegetable sales were continuing to expand, so no new apple trees were planted and perennials and herbs were added to the products available.

In 1987-88, they set up three hoop houses (two 14x48, one 28x48, from Ed Person in Moultonboro) at the base of the orchard just behind the house. In 1992, the Larochelles expanded again, putting up 30x100 Ovaltech further up the hill.

One feature of this new house is the overhead door at the far end. Rather than sliding open and remaining flat, shading plants, the door rolls onto a drum, letting in light.



**The Season Begins** around the first of February—the new house is the first to open. Dave and Mike feel plants grow better in the bigger space and increased air circulation in the larger house. Geraniums (3000 zonals for 4 1/2s; ivies for hangers) arrive first. The Larochelles are cutting back on unusual hangers this year and are concentrating on the more traditional ivies.

They grow from plugs and rooted cuttings—"we can start later and save on heat." Plants are grown on the floor (covered with 994 Ground Cover—a polypropylene fabric); the crop is hand-watered from the center aisle and side aisles and fed with a Dosmatic proportioner.

Once that house fills, plants are brought down to the hoop houses nearer the stand. One is kept cool and filled with pansies.

All houses are heated with LP gas—service is a major factor: "my neighbor is in the business—he's here if I need him."

Between four and six thousand perennials arrive in March: They and the same number of herbs are potted up in Belden quarts. (Those that overwinter are repotted in the fall in gallon and half-gallon pots.)

Their definition of "perennial" is broad—and somewhat personal: their 1993 list includes five types of peony (in two-gallon containers), 54 of clematis (one-gallon) and one of rudbeckia ('Goldilocks').

Tina's on the Board of the New Hampshire Herb Society and herbs are an Apple Ridge specialty. A good selection of both annuals (eight types of basil, 16 scented geraniums) and perennials (19 mints, 15 types of thyme) is offered. Monarda (nine varieties) is listed as an herb. Tina explains: "Monarda as 'Bee Balm' is listed as a perennial, but as 'Oswego Tea' (the colonists used its leaves during the boycott of British imports), it's an herb. As Tina says, "Where do you draw the line?"

Ten thousand mum and aster rooted cuttings arrive in May and are potted up and grown outside under a Chapin overhead watering system.

Fruit baskets are a big item in late fall; and in December, it's Christmas trees and wreaths they make themselves.



**The Two Aspects** of the Apple Ridge operation fit together better than one might think, according to Dave. Pruning is done in late winter; bedding plant sales slow down by the end of June; spraying is done after twilight, after the wind goes down. (Dave uses a 100-gallon Kinkelder air blast sprayer.)

Apples are affected by whatever the season brings for weather—but a 4000-bushel crop is average, and these are all hand-sorted; seconds and drops are used for cider.

Back in the '80s, when the apple maps went to the rest areas, tour-

ists came looking to pick-their-own; now visitors are more local—but come more often, picking a few pounds on two or three weekends, and returning the following year. Weekdays are quiet, but weekends are busy and require a person supervising the orchards.

There's a wholesale operation as well—a 7x7x14 delivery truck (with a flower—as well as an apple—on its side to indicate the range of Apple Ridge products). "Too much wholesale," Dave says; we're nearly 75%: we need to reverse the percentages."



**The New Stand** may do just that. The road to Apple Ridge is newly tarred—and the farm is situated on a sharp curve where cars have to slow down—but there's no traffic. "And people are busier," Dave says. "They won't go out of their way anymore, but they will stop for fresh produce if it's on their route home."

The new retail stand is right on King Street, the main street of Boscawen, across from the Kettle and Crane bed-and-breakfast. The three quarter-acre property includes a 175-year-old cape with porch and dormers and its gam-

brel-roofed shed. There's space to park eight cars. Although smaller (16x24) than the stand at the farm, the shed will become the new center of the retail operation. A porch had been added to the front and pine boards cover the inside walls. Plans include selling fresh vegetables, setting up a 10x24 display greenhouse and filling the lawn area with potted perennials. Tina plans to start a small garden beside the shed and offer customers freshly cut herbs.

The sign is up. The new stand should be open by April fifteenth. Some logistics need to be worked out: produce will have to be brought from the farm and the farm will still offer pick-your-own. So during apple season, the stand at the farm will be open as well. But that's only from Labor day through mid-October: from mid-April through Christmas, the Larochelles plan to have the King Street stand open 10-6 seven days a week. There'll be ads and promotions, but everyone feels the market is there. There's definitely more visibility—and that's a good start. (B.P.)

(Apple Ridge is at 151 Water Street in Boscawen; the new retail stand is on 218 King Street; Dave, Tina, and Mike can be reached at 603-796-2654.)



# *Land Application of* **BIOSOLIDS**

*Tom Buob*

**T**here has been increasing interest in utilizing waste products as fertilizer substitutes. In the case of biosolids (treated waste products from water and wastewater treatment plants), there can be advantages for both the producers and the users. For municipalities, land spreading can be the least expensive method of waste disposal, and for land owners, applying biosolids can be an inexpensive way to obtain needed nutrients for crop production.

When evaluating whether or not the use of biosolids will be advantageous to you, there are various factors that need to be considered. Since the land application of any waste product can be controversial, one needs to be aware of the social and legal aspects, as well as the scientific. I will only be discussing some of the technical considerations.

The first factor to consider is whether or not the product is of high quality. In the case of biosolids, this pertains to the nutrient content, the presence of heavy metal, and the absence of pathogens. Most of the biosolid materials available tend to be fairly high in nutrient content, but this will vary from one source to another and from one treatment regime to another. The heavy metal contents also vary and are somewhat dependent on the type of industry located in the municipality. The latest federal regulations (EPA 503 regs) have placed limits on heavy metals concentrations for biosolids for land applications. Only materials which are below these levels can be applied. Along with this, waste materials have to be treated to reduce pathogen levels prior to land application.

From a nutrient standpoint, biosolids tend to be high in nitrogen, phosphorus and calcium, but very low in potassium. Depending on what treatment pro-

cess is used, the pH can vary from neutral (7.0) to very high (12.0). The high calcium and pH levels are associated with the lime stabilization process to reduce pathogen levels. The nitrogen exists in the organic form, which means that it releases slowly over time, depending on temperature and moisture conditions. This has advantages and disadvantages, depending on the situation.

Since only high-quality (nutrient-rich, low-metal, pathogen-free) biosolids should be used in a land application program, it is likely that the application rate will be limited by the nitrogen concentration and not heavy metal concentrations. This means that the amount of biosolids applied will depend on the nitrogen requirement of the crop to be planted and the nitrogen content of the biosolid material being considered. A corn crop would certainly have a higher requirement than a grass sod crop, so the application rates would be quite different. As mentioned earlier, the slow-release characteristics of the nitrogen fit quite well the recommendations for many crops, but it is important to carefully estimate the nitrogen from other sources. If the amount of nitrogen in the soil is more than the plants can use, it creates the risk of greater leaching. And this may pose an increased risk of groundwater contamination.

The actual application of biosolids to land will depend on the physical characteristics of the material being used (solid or liquid) and the equipment available for spreading. It is very important that the material be spread evenly over the area to avoid pockets of nutrient concentrations above the recommended rates.

In agricultural operations, biosolids will be only one

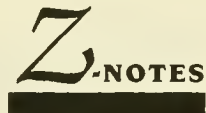


of a variety of nutrient sources. It is important that the nutrient characteristics of these sources be understood prior to use in order to balance the nutrients for the selected crop. For example, since there is very little potassium in most municipal biosolid sources, an effort has to be made to correctly supply this nutrient from another source. In addition, if the crop to be planted has a low or moderate pH requirement, it would be very important not to use a material which had been lime-stabilized and had a very high pH. This can be the case especially in ornamental plantings where soil acidity can be a much more important factor in plant health than in a corn or forage crop.

Monitoring does, and will continue to, play an important role in any land application program. It has become critical, both from an environmental and profitability standpoint, to manage nutrients in a manner that allows for excellent growth, but does not significantly increase the risk of groundwater contamination. Field work using biosolids with different characteristics in progress at this time will be used to improve nutrient management techniques. Soil testing will continue to be a very valuable tool in assessing the effects of nutrient additions from different sources. A better understanding of the nutrient properties and how they interact with the soil will provide valuable information for improving our ability to safely use them.

The lack of public acceptance to land application of biosolids may be a barrier to their use on agricultural land. The range of concerns involve the real case of odors to the perception of diminished property values. Strong educational programs, involving research-based information, are needed to help assess the true risks. The proper use of high-quality materials along with a strong monitoring program can reduce the risk of environmental contamination while recycling nutrients through a useful crop. 🌱

Tom Boub is Extension Educator, UNH Cooperative Extension, Grafton County. His mailing address is PO Box 191, Woodsville, NH 03785; his phone: (603) 787-6944.



### The New Worker Protection Act

**T**he new Worker Protection Act that takes effect on April first will change how we conduct our business. We are now required by law to make available all safety equipment and information to all employees. One new item never discussed before is reentry times on pesticides. Daconil (or Exotherm) now has a 48-hour REI on its label, making it virtually useless to a greenhouse grower.

All dated pesticides in your locker will have to be disposed of. You can no longer use up old pesticides within your spray program. State and federal agencies have all the information you need on the new law—fines for non-compliance can be rather severe. In most cases, the regulations make sense—unfortunately, there are some lax growers in our community, so the government stepped in.

There are a few new copper-based fungicides in our midst. Copper has been with us for decades and the problem has always been phytotoxicity. These new formulations haven't done much to change this. So be careful with open blooms and with tender and/or stressed plants. They will burn.

That gray fuzzy stuff you see is botrytis. We're in perfect botrytis weather right now—low light, high humidity, no air circulation. Correct these problems and the risk is much lower. Ornalin is still your best bet for eradication and control. 🌱

Jim Zablocki is Territory Manager, the Scotts Company, Northeast. He can be reached at (603) 224-5583.

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## DIAGNOSTIC UPDATE

The flow of samples into the Plant Disease Diagnostic Lab was typically slow during January and February. Although most of the samples were from greenhouse operations, one apple and a few conifer samples were also received. The problems diagnosed on the greenhouse samples were predominantly botrytis and edema, although two samples with pythium were received. Needlecasts and insect damage were the problems on the conifers.

Most of the diseases and disorders that occur during the winter months will continue to plague greenhouse operations during April and May. The three major problems to watch for are botrytis, pythium, and edema. All of these are related to watering practices and humidity levels. As I mentioned in the last issue, be sure to space plants properly, provide good air circulation, don't over-water, and remove senescent plant tissues (such as old flowers). Be sure to inspect all in-

coming stock for diseases (especially tomato spotted wilt virus) and insects. Bacterial blight in geraniums is always a potential problem, so continue to monitor your crops on a regular basis. If you notice suspicious plants, submit samples to the PDDL for testing.


During the next month (if we can ever dig out from the snow), inspect woody ornamentals for winter injury. Prune any branches broken by ice and snow loads, remove any leaves that are dead or severely winter-burned, and after bud-break, remove any branches that fail to leaf out. April-May is the time to apply controls for many of the foliar diseases such as anthracnose, leaf spots, and needlecasts. The fungi that cause these diseases are usually capable of infecting the leaves/needles during the period between bud-break and leaf/needle expansion. Sanitation measures prior to bud-break can greatly reduce the levels of infection; however, fungicides may be required



for valuable specimens or where disease has been severe the previous year. Control measures for shoot blights, such as phomopsis tip blight on junipers and lilac blight, also need to be applied as growth resumes in the spring.



Since we have had plenty of snow cover this winter, I would expect snow molds to rear their ugly heads on turf grass again this year. Look for patches of dead turf grass as the snow melts. (You may want to submit a sample to the PDDL to confirm your diagnosis since similar symptoms can be caused by environmental factors).


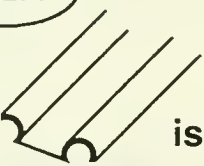
If you wish to submit plant material to PDDL for diagnosis, send samples to: Dr. Cheryl Smith, Plant Disease Diagnostic Lab, Nesmith Hall, UNH, Durham, NH 03824. Samples should be accompanied by an identification form (available from your county cooperative extension office). There is no fee (at this time). Cheryl Smith is the UNH Cooperative Extension Specialist in Plant Health, and can be reached at (603) 862-3841.

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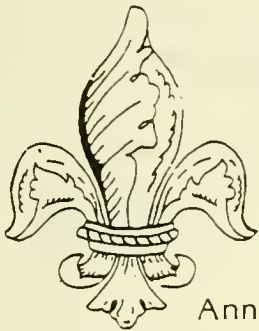
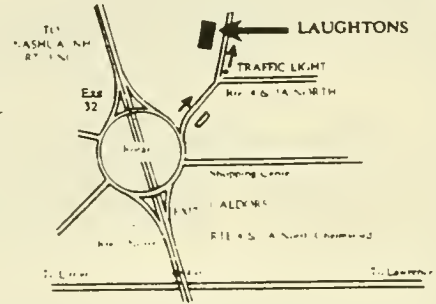
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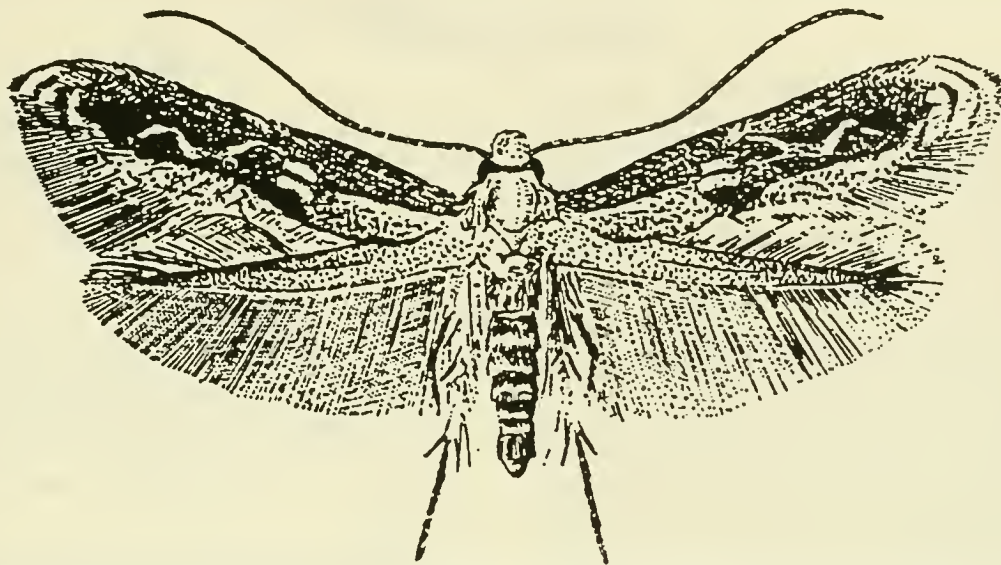
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*Blastodacna atra* (Haw.) adult (from Balachowsky and Real 1966).

# Apple Pith Moth

## A NEW APPLE PEST IN NEW ENGLAND

John S. Weaver and Alan T. Eaton

With all the insect pests that are known to attack apple trees in the United States, most of you tree growers are probably saying, "All I need now is to have to deal with another 'Bug'! Well, sorry to say it, but the Apple Pith Moth is here to stay in New England and we are going to have to learn to deal with it whether we like it or not. The Apple Pith Moth, *Blastodacna Astra* (Haworth), was collected for the first time in the United States in 1989 in Connecticut by Dr. David Wagner. Soon thereafter, the coauthor (ATE) detected Apple Pith Moth caterpillars and pupae in stems of damaged apple shoots, and later reared them to adults. Subsequently, Apple Pith Moth has been collected from a total of eight counties in New Hampshire, as well as southern Maine and Massachusetts. They do not yet occur north of the White Mountains. Detection and control of Apple Pith Moth can best be made by looking for the damage signs of the caterpillars and taking proper corrective measures at the right time of the year.

### DESCRIPTION

The Apple Pith Moth, a micro-lepidopteran, is about 5-6mm (3/16") long, about the size of the lead at the end of a pencil. Its minute size makes it rather difficult to identify without magnification. The moth's head is covered with white scales. Its front wings are narrow and mostly black with white marks and have (usually) an irregular, faint, rusty-yellow line in the middle run-

ning from the base to the apex and two prominent black scaly tufts. When the adult is in a resting position with its wings folded together, it appears to have three pairs of white wing spots: one near the base, a second in the middle, and a third large pair covering the ends. The pupae are golden brown, 5-6 mm long, and with a dark head and a pair of unique paddle-like projections at the end of the abdomen. The caterpillar is 7-8 mm long, with young ones yellowish and older ones more reddish in color. Under magnification, you can see hundreds of very short setae (hairs) covering the caterpillar.

### LIFE HISTORY

in New Hampshire, females lay eggs individually around the base of leaf axils on new shoots in July. Within two hours of hatching, the young caterpillars bore into stems without causing much noticeable damage, except for their tiny entrance holes which are surrounded by rust-colored frass. In New Hampshire, the entrance holes are noticeable during the first week in August. Each caterpillar excavates an overwintering shelter at the base of a bud, referred to as the "logette", which is usually located just below the bark surface, and is often shield-like in appearance. In March and April, the larvae emerge from their chambers and then locate and bore into new shoots. When the trees are in blossom (15-20th May), the larvae are actively feeding and pupae occur in June-July and adults in July-August.

## DAMAGE

Damage is most noticeable in the spring, either just before or after bloom, when the larvae are actively boring in the new shoots of apple trees, causing leaf wilt and die-back of blossoms and terminal shoots. The larvae usually attack spurs and the stems of apical shoots, which stimulates the growth of laterals. The larvae rarely bore directly into the fruit.

## ECONOMIC IMPORTANCE

Apple Pith Moth has been recorded as a pest of economic importance in Europe. Its distribution includes Europe and temperate Asia, and its hosts include species of *Malus*. One of the earliest records of Apple Pith Moth is by Stainton (1855, Entomol. App. p. 77) who quoted a correspondent: "This is a most destructive little wretch in apple grounds, owing to the fact of its mining in the bud and in the alburnum of the bearing spur." There were several reports of moderate to serious outbreaks of Apple Pith Moth in Europe from 1902-1929; damage was severe enough to cause complete defoliation. Today, outbreaks of Apple Pith Moth in France can be severe, but are not very common. Probably because of the wide spectrum of the known natural enemies and the use of modern insecticides, the infestations of this insect in Europe are now less frequent than they were 90 years ago.

We speculate that Apple Pith Moth will not become a problem to most commercial apple growers who use chemical controls. However, in New Hampshire, there is no evidence yet of the heavy parasitism that is common in Europe. Apple Pith Moth might become a serious pest in organic apple orchards and nurseries. In commercial orchards, it probably will become necessary to modify current practices and spray young non-fruit-bearing trees. Effective control probably can be obtained by the application of organo-phosphate insecticides at two critical time periods: 1) July 25-30, when adults are active and eggs hatch, and 2) in the early spring, when apple buds are opening and the overwintering caterpillars emerge from their shelters. Of these times, the insects are more vulnerable in the summer.

John S. Weaver is Survey Entomologist and Alan T. Eaton is Extension Specialist, Integrated Pest Management, and both are in the Entomology Department, UNH, Durham, NH 03824. The phone number for both is (603) 862-1159.



## PPGA HIGHLIGHTS

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from PPGA News, January, 1994

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## BOARD HIGHLIGHTS

### February First

Andrea, Bob, Chris, Peter, and Roger were present.

Peter was thanked for the work he did on the Winter Meeting. People were pleased with the attendance, the talks, and the fact that we made a slight profit (that will be split between us and the landscapers).

Roger showed samples of the handouts he wrote and had made up for Farm & Forest. Bob and Chris will set up the display.

Roger plans to make up a questionnaire to give to members attending the Summer Meeting. This would ask for information about member businesses and how the NHPGA could do more for its membership in general. Bob will work with him on it. August 17 is now the official date for our Summer Meeting. Bill Stockman and Ed Person will attend the March board meeting to work out details.

### March First

Bob, Henry, Dick, and Ben attended. Bill Stockman and Ed Person came to discuss plans for this year's Summer Meeting.

Henry gave a very enthusiastic and upbeat account of plans for this year's New England Greenhouse Conference. He felt the program was particularly strong, with a wide range of topics and speakers with a lot to offer. Harnois will be setting up a greenhouse to house part of the trade show; a bus tour to local operations is being tried for the first time—reaction seems very positive.

Bill and Ed discussed logistics for the Summer Meeting at Ledgewood—parking, registration (at the stand out front), lunch (Perillo's), tent (from Spider Web), trade show, auctioneer (Peter Callioras), Ledgewood tours, tours to Spider Web (from Laidlaw; sponsored by Pleas-

ant View), rain (it won't). The overall day seems to be nicely in place and details (soft drinks, chair and table rentals, toilets) were discussed as well. Ed brought a list of nearby motels and bed-and-breakfasts and a readable map; Bob Demers is looking for an appropriate door prize.

Andrea will be the board member working closely with Bill and Ed on the meeting.

Few handouts were taken from our Farm & Forest booth—we feel that the booth needs to be manned and the information sheets handed to people. Roger will be working on next year's handouts and the overall display as well as a questionnaire for members.

Peter will be working on next year's Winter Meeting—he sent word that it would be another joint meeting with the landscapers.

This year's Twilight Meetings are in place; two are already planned for 1995. Ben will be making the arrangements for these meetings—coordinating plans with hosts, making sure a board member is at each to act as moderator.

Dick will be looking for speakers for 1995's pesticide recertification meeting.

It was decided to co-sponsor New England Grows next year.

It was decided to ask Chris to write to the Pesticide Board, asking for a list of the specific requirements for recertification presentations, so that these can be forwarded to other organizations who can, in turn, tailor their offerings to meet New Hampshire's requirements as well as their own.

It was decided to discuss criteria used in awarding the NHPGA scholarships at the next meeting.

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## WORKER PROTECTION STANDARD FOR AGRICULTURAL PESTICIDES: Impact on All New Hampshire Certified Applicators

Margaret Hagen

**T**he Worker Protection Standard (WPS) is a Federal regulation designed to protect agricultural workers and pesticide handlers. The WPS requires you to take steps to reduce the risk of pesticide-related illness and injury of you 1) use agricultural pesticides, or 2) employ workers or pesticide handlers who are exposed to such pesticides.

Labels of agricultural pesticides will require compliance with the WPS. Pesticide companies are modifying labels to include WPS requirements. Labels on over 8,000 products must be changed. Each modified label includes an Agricultural Use Requirements box stating "Use this product only in compliance with its labeling and with the Worker Protection Standard, 40 CFT," plus other references to the WPS. Pesticide companies must put the new label on their products by April 21, 1994. After October 23, 1995, pesticide dealers cannot sell agricultural product with the old labeling without the WPS references.

When you use products with WPS labeling, you must comply with specific label requirements. You must observe restricted entry intervals, assure that your pesticide handlers use specified personal protective equipment, and notify workers about applications when the label requires *both* oral and posted notification (only for pesticides in the most toxic category).

On and after April 15, 1994, additional requirements are needed. Your workers and handlers must receive pesticide safety training. You must post information about pesticide applications in a central location. You must provide decontamination sites with soap, water, and paper towels for workers, and a change of coveralls for handlers. You must also notify employees (orally or by posting) about all pesticide applications.

There are additional WPS requirements and specific exceptions to these requirements which are detailed in Environmental Protection Agency (EPA) "How to Comply" manual.

On or after April 15, 1994, pesticide handlers must be trained before they do any handling task using a pesticide with a WPS label. Workers must be trained before the 16th day that they enter areas where, within the last 30 days, a pesticide has been applied or a restricted entry interval is in effect. The 16-day time frame changes to 6-day time frame for workers after October 20, 1997. The 16 days (6 days) need not be consecutive and may occur over several years of employment.

Because of the broad scope of the Federal WPS, the NH Department of Agriculture, Division of Pesticide Control, under existing rules, will incorporate the standard into the initial certification process for certified pesticide applicators. Those becoming certified will have to demonstrate proficiency in the WPS. This will be accomplished by including a brief worker-protection exam among the tests taken by those applying for certification.

**Those people who are already certified must also demonstrate proficiency in the WPS by passing an exam. This must be done prior to the issuance of 1995 licenses, regardless of the recertification year.**

Specifically, the requirement for taking the worker-protection exam will fall on all certified private applicators, and on commercial applicators who are certified in categories A1 (Agricultural Pest Control, Fruit), A2 (Christmas Trees), or H (Demonstration and Research where you have tested in one of the above listed categories). This requirement may also apply to commercial applicators in other

categories who are employed by an agricultural establishment, such as a person holding a GI license who works for a nursery or grounds maintenance company. (It would not, however, include commercial applicators whose activities are non-agricultural in nature, such as residential or right-of way applications.) All certified applicators who pass the worker protection exam will be considered qualified to conduct pesticide safety training of their workers and pesticide handlers, required under the standard. **Note, however, that certified applicators who have not yet passed the worker protection exam will not be considered qualified to train workers or handlers, and may have difficulty complying with that aspect of the Worker Protection Standard when it goes into effect on April 15 of this year.**

To obtain study materials for the WPS you can contact Faye Cragin or Dr. Stanley Swier at the UNH Cooperative Extension Entomology Department at 131 Main Street, Nesmith Hall, Room 23, UNH, Durham, NH 03824-3597 (phone 862-1159). There is no charge for the study materials but there is a \$3 mailing charge. In addition to the EPA manuals, each County Cooperative Extension office has a videotape (3 hours long) of the January training session held in Durham. Tapes can be borrowed for a \$5 returnable deposit.

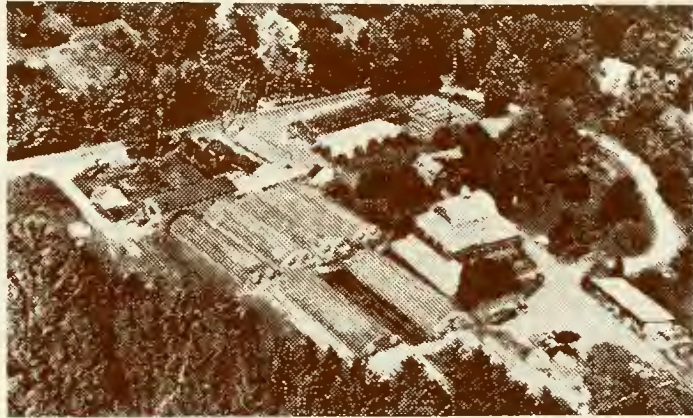
To schedule a WPS exam contact the Division of Pesticide Control in Concord (271-3550) or the agricultural resources educator in your County Cooperative Extension office. The Division of Pesticide Control is planning to schedule exams in each county.

Margaret Hagen is Extension Educator, UNH Cooperative Extension, Hillsborough County; her phone there is (603) 673-2510.



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## TWILIGHT MEETINGS

### **Northern Nurseries Barrington**

*April 28*



“Meat-and-potatoes nursery” is how Bob Averell describes Northern Nursery in Barrington, host of the NHPGA's first 1994 Twilight Meeting, on April 28 between 5:30-7:30 pm.

Bob (general manager) will give a tour showing “what we are, what we're about.” He describes Northern (part of a larger organization) as a seven-acre re-wholesale nursery that caters to landscapers, retail garden centers, and municipalities.

There are “no real specialties:” material ranges from ground covers to five- and six-inch caliper trees. This year, emphasis will be put on landscape-size perennials in one- and two-gallon pots.

Visitors will see how the seven acres are organized, how material is handled, an irrigation system using both a well and a pond.

“Meat-and-potatoes” is okay—that's what most of New Hampshire is about and this is a chance to preview the staples before spring planting begins.

Directions: go north on 125 for a quarter mile beyond Lee Traffic Circle; go left on Pinkham Road (you'll see the sign)

For information, contact Bob at (603) 868-7172.

### **D.S. Cole Growers Loudon**

*June 16*



On June 16, Doug Cole will host a Twilight Meeting at D.S. Cole Growers, Loudon; time: 6-8 pm.

Summer Jumbo Annuals and the first of the fall cyclamen crop will be growing in an eight-bay 33,000-square foot glass house with venlo-style roof made by Verbakel-Bomkas, of DeLier, Holland. The house has computerized environmental and irrigation controls; aspects of the operation include roll-out ebb-and-flo benches, an Echo revolving hanging basket system, and a Javo potting machine with automatic fertilizer and label dispensers.

This is an excellent opportunity to spend time touring one of New Hampshire's more state-of-the-art operations and visit with friends and NHPGA members.

Directions: from 93, take 393 East onto 106 N, then left onto Village Road. D.S. Cole is two miles on the left. (from the east, take Route 4 to 106 N, etc.)

For information, contact Doug at (603) 783-9561.

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