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AUGUST / SEPTEMBER 1999



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for participating farms, map, sched-  
ule of events: UNH Cooperative  
Extension Rockingham County  
(603-679-5616) or Strafford County  
(603-749-4445)

18 VERMONT ASSOCIATION OF PRO-  
FESSIONAL HORTICULTURISTS (VAPH)  
SUMMER MEETING, Vergennes, VT;  
802-865-5979

20 MAINE LANDSCAPE AND NURSERY  
ASSOCIATION (MeLNA) FIFTH ANNUAL  
HORTICULTURAL FIELD DAY, Rogers  
Farm, Orono, ME; 207-225-3998  
20-22 Cornish Fair; Robert Bladen  
at 542-4622

21-22 Belknap County 4-H Fair;  
Sue Roberts at 267-8135; Conces-  
sions: Ginny Clifford at 524-4398

25 OPEN HOUSE, Griffin Green-  
house and Nursery Supply, 1619  
Main Street, Tewksbury, MA;  
978-851-4346

**September**

1-6 LANCASTER FAIR; Paul Thurston  
at 788-4531

2-6 HOPKINTON STATE FAIR; Alan  
Hardy at 746-4191

10-12 HILLSBORO COUNTY AGRICUL-  
TURAL FAIR (fairgrounds in New  
Boston); John Robertson at 588-  
6106

☞ 15 OPEN HOUSE/NHPGA TWI-  
LIGHT MEETING, Van Berkum Nurs-  
ery, 4 James Road, Deerfield, NH;  
603-463-7663.

15-18 FORTY-NINTH ANNUAL MEET-  
ING OF THE EASTERN REGION OF THE  
INTERNATIONAL PLANT PROPAGATORS'  
SOCIETY, Minneapolis Airport  
Marriott, Minneapolis, MN; Margot  
Bridgen at 860-429-6818

17-October 3 EASTERN STATES EXPO-  
SITION, 1305 Memorial Avenue,  
West Springfield, MA; 413-737-  
4716

7-25 ROCHESTER FAIR; Jeffrey Taylor  
at 332-6585

17-October 3 EASTERN STATES  
EXPOSITION, 1305 Memorial Avenue,  
West Springfield, MA; 413-737-4716

24 NEW HAMPSHIRE DAY, Eastern  
States Exposition

☞ 28-30 NHPGA/COOPERATIVE  
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NEW JERSEY GARDEN CENTER BUS  
TOUR; Nancy Adams at 603-679-  
5616

30-October 3 DEERFIELD FAIR; Jane  
Boucher at 463-7421

**October**

1 STOCKBRIDGE SCHOOL FIELD DAY  
(acquainting high school students  
with Stockbridge programs),  
Amherst, MA; 413-545-2222

9-11 SANDWICH FAIR; Richard Papen  
at 284-7062

23 (tentative) FALL UNH-FFA IN-  
TERSCHOLASTIC CAREER DEVELOPMENT  
EVENT, University of New Hamp-  
shire, Durham; Dave Howell at  
603-862-1760

**November**

3-5 ERNA'S FALL EXPO '99, Atlantic  
City, NJ; 1-800-376-2463

**January**

27-29 NEW ENGLAND GROWS! Hynes  
Convention Center, Boston, MA;  
508-653-3009

**February**

8 THIRD ANNUAL STOCKBRIDGE  
SCHOOL JOB FAIR, Amherst, MA;  
413-545-2222

11-12 FARM AND FOREST EXPOSITION,  
Center of New Hampshire Holiday  
Inn and Conference Center,  
Manchester; 603-271-3788

17-20 RHODE ISLAND SPRING FLOWER  
AND GARDEN SHOW, Rhode Island  
Convention Center, Providence;  
exhibitor information: Nancy Syme  
at 1-800-766-1670 or  
nsyme@flowershow.com

**March**

24-26 BREATH OF SPRING FLOWER  
SHOW, Cheshire Fairgrounds Arena,  
Keene, NH; Steve Curtin at 603-  
355-6335, extension 161

24-26 SEACOAST FLOWER, HOME, AND  
GARDEN SHOW, Whittemore Center,  
Durham, NH; 603-356-7750

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**Credits**

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Waterville Valley; photograph: Rick  
Raymond

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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.

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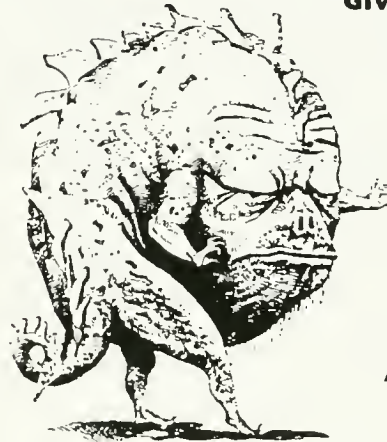
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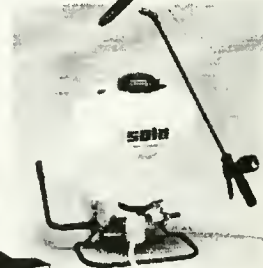


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## Expand Your Business Beyond Spring

ROBERT DEMERS

In past years, we have pushed our busy season beyond Memorial Day. I've written several articles about keeping your benches full and your garden center clean in order to keep up your good image.

By the end of June, we try to be done with cell packs and fill our place up with all sizes of jumbo annuals and perennials, as well as summer-flowering shrubs. That's the start of our summer season.

I find people are looking for sales. By July, their yards are done and they're looking for fill-ins or instant color for a party. But basically, they're looking for deals.

We fill our landscape beds with flowers to get people to come down and look around. Perhaps it'll give them an idea or two for their own yards; perhaps it'll draw them into our store and greenhouses.

Mid-to-late summer, we have an event we call "Summer Yard Sale and Customer Appreciation Day." It's usually at the end of July or early August—a good time to clean up the garden center before I lose my summer help and bring up the mums.

We start advertising this event in early July. At the end of our parking, we put up two tents and edge them with flower benches not in use. We let anyone who wants to

### Welcome, New Members!

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participate use these benches free. I take reservations and usually end up with 17-20 families. Yard sales and flea markets are huge draws if advertised in the right way. Yard sales are busiest in the morning, so take advantage of this. In our own sales yard, we have a tent as well. Under this are items that we've overstocked or that have been collecting dust, as well as your basic junk that some salesman talked you into buying and didn't sell. We have one of our sales staff there along with the motto, "Customer or Dumpster." It costs more to hold onto these items than cutting your losses now.

Another event we have is our pallet sale. We put a variety of plant material on pallets, making each pallet different or giving it a theme. These pallets are sold for about half

the retail price of the material on them and are sold as a pallet. Each has some things that we're long on and a few items I use as bait.

We give out steamed hot dogs as well as refreshments. This feeds our customers and keeps them there longer. You know as well as I do that there's always the few that ruin it for others. So for this, my brother-in-law is chef for the day and the entire area has signs saying, "Free Hot Dogs with Donations Going to the Crohn's Foundation." We have a huge jug to hold the donations and Dennis knows when and for who he should rattle the jug.

This year at our yard sale event, we're planning to try out having a petting zoo. We hope that this will keep our customers around for a longer stay.

I know every operation is different, but maybe this will put the wheels in motion for an enjoyable summer event for your customers—as well as your employees. Timing will be different for your event as well, but whenever you hold it, it makes a nice clean-up sale. So have some fun with it.

*Robert Demers is at Demers Garden Center, 656 South Mammoth Road, Manchester. For more about their summer sales, call 603-625-8298.*

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### A Grand Opening

UNH Cooperative Extension is excited to announce the fall opening of its Family, Home and Garden Education Center in downtown Manchester! Scheduled to open in November, 1999, in a newly renovated space at UNH Manchester on Commercial Street, the center will have a statewide toll-free info line with which to respond to a wide variety of questions related to homes and gardens.

Staffed by volunteers receiving 100 hours of training, the center expects to receive over 20,000 calls a year on everything from apples to bug zappers. At volunteer fingertips will be information on fruits and vegetables; trees, shrubs and turf; annuals and perennials; insect and disease problems; IPM; food safety and food preservation; and backyard livestock and wildlife problems. The info line will be available from 9am to 2pm year-round.

So if you, your customers, or your employees need practical solutions to the everyday challenges of growing plants and animals in New England, watch for our new number, coming soon!

### A Reminder . . .

Grant applications are now available from the horticultural endowment established by the New Hampshire Plant Growers' Association. Grant monies totaling \$2,500 will be awarded for 1999. All horticulturists and researchers are invited to submit proposals that would benefit the ornamental horticulture industry in New Hampshire and elsewhere. (See the June/July issue of *The Plantsman* for a more detailed description.)

The deadline for proposal applications is October 1, 1999. Interested individuals can obtain the endowment's application form by writing the New Hampshire Plant Growers' Association, Horticultural

Endowment, 7316 Pleasant Street, Loudon, NH 03301.

### A Thank You

*Ann Hilton*

The twilight meeting and garden center evaluation workshop held at Spider Web Gardens in Center Tuftonboro on June 24 was a great success. Over 80 people attended. Many attended the workshop organized by Dave Seavey, UNH Cooperative Extension. These people received a *Garden Center Critique Workbook* and the knowledge of how to use it to improve their own businesses. Bill Stockman, owner of Spider Web, gave an extensive tour of his operation. This was followed by a cookout put on by the Plant Growers.

A big thank you goes out to Bill for opening up his business to us, to his crew for all their work in preparing for the event, and to David and his fellow Extension agents who assisted in the workshop.

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### Touring for Profit

A three-day bus tour of seven New Jersey/New York garden centers is taking place September 28-30. Participants will travel by C&J Trailways coach bus to the New York City area and spend two nights at a Ramada Inn in East Hanover, New Jersey.

The schedule's a busy one and includes visits to Marterhorn Nursery, Donaldson's Farm, Country Nursery, Great Swamp Greenhouses, J&M Plants, DuBrows Nursery, and Cerbos Nursery. Some of the names are familiar; others are new: all are innovative, high-quality operations with plenty of ideas to share.

Evenings are free; although on the second night, you can choose to attend an optional dinner cruise around the island of Manhattan.

The price for transportation and lodging is \$250 (double) or \$360 (single). Each person will pay for his/her own meals.

The event is co-sponsored by UNH Cooperative Extension and

the New Hampshire Plant Growers' Association. By now, brochures have been sent, but for more information, call Nancy Adams at 603-679-5616.

### Specialist Selected

David Kopsell has accepted an offer to fill the position of Extension Specialist, Vegetable Crops, which opened with the retirement of Otho Wells. Thirty percent of David's time will be devoted to research and seventy percent, to Extension; he will be a member of the Plant Biology Department.

David grew up on a 200-acre family-run nursery operation in northeastern Illinois. He also ran a tree-transplanting business with his twin brother for several years. He has a bachelor's degree from Illinois State, where he majored in horticulture and minored in business. He completed his masters and Ph.D at the University of Georgia. His research has been with Vidalia onions and he has published in a number

of peer-reviewed journals.

We expect David to start on November first, 1999.

### Relocation, Expansion

As of June first, Rimol Greenhouse Systems (RGS) has relocated to a new facility in Hooksett. The new address is 40 Londonderry Turnpike, Hooksett, NH 03106.

Rimol also has announced the development of its own line of greenhouses, manufactured in their new 6,000-square-foot Hooksett facility. These houses, described as "high-quality, affordable, rugged, and easy to assemble," will be available in the fall, starting with the Northpoint, a peaked, free-standing structure available in a variety of sizes. The Catamount, a 15-foot-wide coldframe structure, will also be available. "Additional structures and products will be developed as manufacturing capabilities expand."

To facilitate all these happenings, two new staff members have been added. Mike Maret joined RGS in May. Mike will lead the customer service and manufacturing/distribution operations effort.

And Ken Gosselin joined in June. Ken will handle inside sales, customer product support, and development of computer programming. Ken has worked as a grower and is a former director of the NHPGA.

The phone numbers are 603-629-9004 and (toll free) 1-877-RIMOLGH.

### Some New Possibilities

Last summer, Dave Howell, Department of Resource Economics and Development, College of Life Sciences and Agriculture (COLSA), at UNH in Durham, was one of 14 agricultural educators from the United States sent, through FFA's Farmer-to-Farmer program, to advise agricultural teachers throughout the Ukraine. Although he spent only one day at the Agricultural



Student research plots, Agrlultural College of Crimea



College of Crimea, it was long enough to find out that there was strong interest at the college in hosting an exchange student from UNH.

This year, Amy Snedaker, pre-vet major in COLSA, is spending the summer at the Agricultural College of Crimea. Her visit is funded by the UNH Undergraduate Research Program. She is the only American there, living in the dormitories along with the 700 students. (The college is a two-year technical college—the Ukrainian equivalent to our Thompson School—located 15 miles from Simferopol, the capital of Crimea.) She's working on a research project, testing how some of the pumpkins developed by Brent Loy at UNH will grow in the Ukraine and if they have the potential to become a profitable agricultural export.

The research is simple. She's growing four varieties from seed in a 20'x40' plot, collecting data on growth and production. Most farmers rent small parcels of state-owned land and lack funds for fertilizer or mechanization. Even at the college, the seeds are planted without soil amendments and sometimes watered by hand. So the research, although simple, could be of great value.

Pleased with this positive connection, Dave is currently writing a grant proposal for the funding for three years of an exchange program between the students and faculty at UNH and those of the Agricultural College of Crimea.

Preparation is involved. Students would have to know Russian or Ukrainian. (Amy spent last summer at a six-hour-a-day total immersion course in Ukrainian at

Beloit College in Wisconsin.) But the exchange would offer credits, serious research experience, and an opportunity to live in quite beautiful surroundings (the Crimea edges the Black Sea) in a country going through some difficult times as it emerges into nationhood.

Conversely, the Ukrainian students coming to New Hampshire would need to know English and the year here might include the summer before classes begin. This would be spent working at one of the greenhouses or nurseries in the state, improving language skills while learning about the industry. For people looking for young, enthusiastic, educated summer employees not intimidated by hard work, this might be of serious interest.

For information, contact David Howell at 603-862-1760.



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### Rhodo City

A campaign has begun to give an old mill town a new identity. Newmarket, New Hampshire, is to become "Rhododendron City."

The Main Street Program, a local non-profit association of volunteers, is organizing the planting of rhododendrons throughout the town. Plans were drawn up for each public property and for private and business properties asking assistance.

This year the group bought 240 rhododendrons—all types hardy to this area—from a Connecticut nursery. They sold them to businesses and private individuals and donated others for planting on town properties.

A spring festival—the Newmarket Rhododendron Arts and Music Festival, on May 22—was organized to coincide with the planting.



ILLUSTRATION: MICHAEL DIEV

The planting at the library was delayed until the site was evaluated ("deteriorating lawn areas, dying and overgrown ornamentals and trees, materials ill-suited to hiding outside air conditioning equipment"), a landscape modification plan outlined, and a new landscape created by designer Marilyn Benson approved by library trustees. The library sits alone on a hill, but originally held books for the employees of a large mill. When the mill was torn down, the

owners gave the building to the town. One reason plants do not do terribly well there is that under the library lawn is the cement road that connected various parts of the mill complex. Gene Novak, one of the volunteers involved, has contacted an army reserve unit, an engineer battalion, headquartered in Londonderry to see if it would be willing to remove the cement.

Once that is done (perhaps this fall), soil can be brought in and a healthier planting begun. The town has promised to furnish an irrigation system.

And after that? The Main Street Project plans to facilitate more plantings next year. There's no final goal. Just more and more rhododendrons blossoming each spring.

For information, Gene Novak can be reached at 603-659-6652.

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**Winners 2000**

(*Greenhouse Product News*, May, 1999)

All-America Selections (AAS) and All-America Rose Selections (AARS) offer twelve award-winners for the year 2000.

AAS, which is celebrating its 65th anniversary, invites breeders from around the world to enter unsold seed-propagated flowers and vegetables into its annual trial. Labeled only with coded numbers, the entries are grown alongside similar varieties and evaluated by professional horticulturists.

There are nine winners:

'Blushing Beauty' (Seminis Vegetable Seeds), four-lobed, blocky bell peppers that change from ivory to pink to red as they mature;

'Cosmic Orange' (Ernst Benary), a dwarf, branching cosmos with improved vigor and habit;

'Fiesta del Sol' (Ernst Benary), the

first truly dwarf Mexican sunflower, with bright orange, daisy-like blossoms attractive to butterflies;

'Indian Summer' (Harris Moran Seed), the first sweet corn to feature kernels of white, red, yellow, and purple;

'Melody Pink' (Sakata Seed), a cutflower dianthus with sprays of single one-inch pink flowers on stems of up to twelve inches;

'Mr. Big' (Seminis Vegetable Seeds), sweetly flavored peas in pods four inches long and a half inch in diameter;

'Savoy Express' (Seminis Vegetable Seeds), the earliest Savoy cabbage to hit the market, ready for harvest 55 days after transplanting;

'Soraya' (Ernst Benary), a sunflower with striking deep orange flowers with chocolate brown centers;

'Stardust Orchid' (PanAmerican

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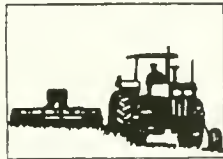
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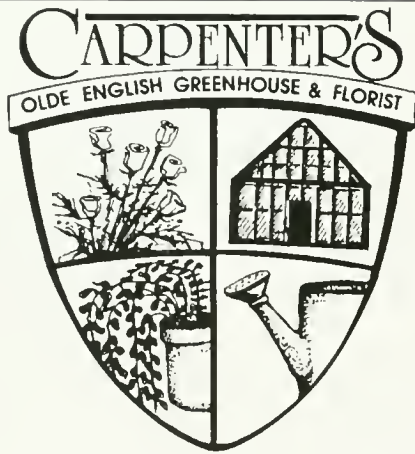
## Who Will Follow in Your Footsteps? Your Management Succession Plan

**H**ow much quality time do you dedicate to spending with others—your spouse, the next generation, or hired managers—involved in your business? Do you feel that there is someone who could manage your business in your absence? Suppose you were struck with an illness during your busy season or decided to take that long-overdue and well-deserved extended vacation? Who'd fill your shoes and would (or could) step up to the plate? These are all important questions to ask yourself when creating a management succession plan for your business. The following are some key points to address when preparing and building your management succession plan:

- First and foremost, the farm business must be profitable enough to allow for an ownership transfer.
- The business must maintain a conservative debt level or plenty of cash reserves (working capital). This allows for the succeeding management team to grow without overwhelming financial burden.
- A mechanism for transfer must be in place. In other words, is your business entity properly structured, i.e., as a partnership, a corporation, or limited liability company?
- The potential new management must currently be sharing the responsibilities, especially to learn all phases—from finances and production to equipment maintenance and marketing.
- A good communication system (both written and verbal) must be in place.
- The next manager(s) must be committed to the business.
- Financial management, especially the numbers, must be shared with the succeeding manager(s).
- A professional improvement (strategic planning) plan for you and key employees must be established. Be open to learning and change.

Although you may feel you're still years away from needing to get serious about your management succession plan, don't fool yourself. This takes years to plan properly. Everything you've worked so hard for is definitely worth taking the time to preserve.

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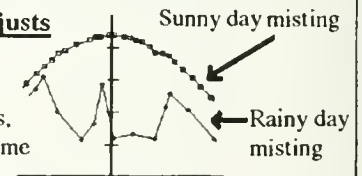
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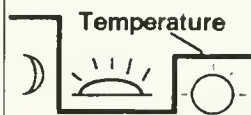
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# The Internet Four Years Later: Where To From Here?

DAVID BROCK

While writing this article, I was reflecting upon my grandfather's purchase of a state-of-the-art fax machine in the late 1980s. It seemed that everyone else was buying one, so it was the right thing to do. Not knowing how it worked or why exactly, he bought it. This relatively expensive machine eventually became a mediocre photocopier. Others, of course, were very successful in the adoption of fax technology, to the point that today it comprises as much as twenty-five percent of all of our communications, primarily in the form of purchase orders, solicitations, confirmation letters, or reports.

The Internet and email appear to be following a similar trend. There exist many early adopters, who may or may not make the best use of the technology, and the market followers who still have not considered it a necessity to conduct business and communications using the tools of the Internet. This evolution to electronic technology will continue, as email and electronic communications, due to their efficiency, play an increasing role in our everyday work habits and practices. On any given day, up to fifty percent of our daily communication comes via email or through the use of a supplier's or other company's website.

Statistics tell us that up to twenty-five percent of the overall work force now use the Internet (primarily email and data gathering) every day. Increasingly, Wal-Mart, Home Depot, and even

small companies are requiring electronic data processing for business. While still in its infancy, e-commerce sites now take in thousands of dollars of horticultural sales every day. In all areas of horticulture, many more are considering the efficiencies of the technology to streamline operations, increase availability (on the web, you're always "open"), and provide timely customer support and services.

Data gathering is perhaps the most useful by-product of the Internet's explosive evolution. Growers can find details about most of the latest varieties ([[www.provenwinners.com](http://www.provenwinners.com)], [[www.ecke.com](http://www.ecke.com)], [[www.fischerUSA.com](http://www.fischerUSA.com)], to name a few), news and editorial, ([[www.greenhousebiz.com](http://www.greenhousebiz.com)]), the latest in product offerings and specifications ([[www.horticulture.com/TLC](http://www.horticulture.com/TLC)], [[www.fullersystem.com](http://www.fullersystem.com)], [[www.jhc.com](http://www.jhc.com)]), as well as MSDS and regulatory knowledge ([[www.usda.gov](http://www.usda.gov)], [[www.epa.gov](http://www.epa.gov)]). There are now hundreds of websites, primarily at the universities and Cooperative Extension sites (a complete listing is at [[www.horticulture.com](http://www.horticulture.com)]), which give growers immediate access to knowledge about growing as well. And more websites allow for ordering directly on-line, passing the burden of order entry to the customer, eliminating duplication, errors, and paperwork.

From a retail perspective, the traditional garden center will continue to be the primary outlet for sales (along with mass merchandisers, of course). In my opinion, consumers will want to see, feel,

and experience the actual products they purchase for home gardening, as they always have. The Internet offers one advantage, though—timely, integrated, and always-on information about a given plant's color, habit, culture, etc. And for those items that are easily shippable, virtual retail stores are popping up everywhere on the Internet ([[www.garden.com](http://www.garden.com)], [[www.selectivegardener.com](http://www.selectivegardener.com)], [[www.germaniasseed.com](http://www.germaniasseed.com)]). Attempting to put a local garden center on the web, however is a bit trickier—do you really want a customer from California when you only cater to the Loudon area? Aside from useful information such as hours of operation, directions and general information, will a local customer really want to conduct business with you on-line when you're only a stone's throw away? Probably not. Still, if one thinks about the Internet as a new media Yellow Pages, having a listing or one-page "ad" is worthy of consideration.

Eventually, all of us will be more seamlessly integrated into each other's businesses, offering real-time plant availability, end-of-season specials, distributor hard good availability, and order placement and review, along with on-line registration for events ([www.sgcts.org](http://www.sgcts.org)). If nothing else, growers should consider an Internet connection to gain knowledge and information and for using email because these are timely and efficient tools. Having your own web page or website is not necessary for many, but will even-

tually become of interest over time, if for nothing else than to be listed, just like the phone book. Like my grandfather's fax machine, though, one needs to be mindful of why, exactly, they're taking the time and making the investment in the technology.

Most can not even fathom the impact that the next advances for the Internet will have on each of us. Higher speeds, better tools,

more electronic commerce, automated delivery of information, "smart" software agents, and yes, fraud and the "dark side" will all become part of our desktop productivity (or time-wasting) tools. Making the most of them and determining how, exactly, the Internet can improve your bottom line, is the holy grail that some are finding, others are looking for, and many have not even contem-

plated. Don't simply use the Internet because everyone else is; have a plan and purpose to use it to your advantage. Once these are in place, the up-front investment is well worth the effort.

*David Brock is president of horticulture.com, serving the industry since 1995. He also manages Fuller System, a smoke fumigant manufacturer. He can be reached at Brock@horticulture.com.*



#### ASK THE GREEN SPOT

**Q** What is the specificity of the commercially produced predatory insects? Are there "broad spectrum" predators? (submitted by a southern NH greenhouse grower)

**A:** I recently read a catalog which was offering parasitic nematodes, ladybugs, lacewings, *Trichogramma spp.* parasitic wasps, and praying mantis egg cases. According to the copy, the organisms above are capable of controlling all your garden pests.

Simply put, this is false advertising. Parasitic nematodes are capable of impacting over 200 pests which spend all or part of their lives in the soil. Ladybugs are very effective aphid predators. So are lacewings, except that they can also impact whiteflies and the immature stages of certain scale species, like long-tailed mealybugs. *Trichogramma spp.* wasps are useful in reducing moth and butterfly larvae numbers by parasitizing the pests' eggs before they hatch. And mantids...well, they are more or less a novelty which can symbolize biocontrol. This leaves spider mites, thrips, most scale species, fungus gnats, leafminers, and whiteflies to run rampant.

The catalog of which I write (actually, I've seen several which make these outrageous claims) says that mantids, ladybugs, and lacewings can cure all these unaccountable ills. This just isn't true. Ladybugs and lacewings may nibble at pests other than aphids, but to expect control is another matter altogether. So, to answer the question directly: no, there are no broad-spectrum predators; they are all fairly specific.

To be more accurate, these misleading catalogs should state that these predators are fairly opportunistic (many predators are like that). Release an aphid predator on mites and it may eat a few before it flies away looking for aphids. A lacewing may eat a number of whitefly larvae before it pupates. When it emerges as an adult, though, it will fly away to look for aphids. For these copy-writers to claim that mantids eat aphids, thrips, mites, whiteflies, and more is an absolute scam.

Biocontrol agents work very well for most of our customers. They are not limited in their selection to only the falsely touted "general predators" of the superbug set. We might eat a fast-food burger now and then, but everyday?! What do you think we are—broad-spectrum predators?

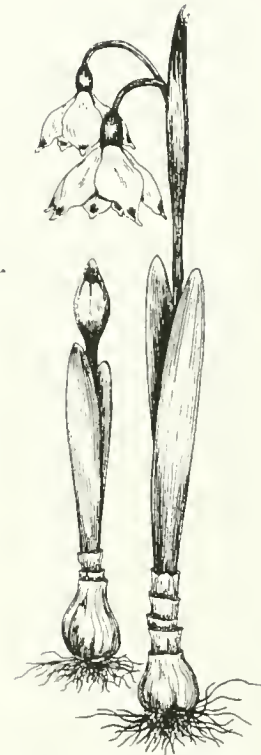
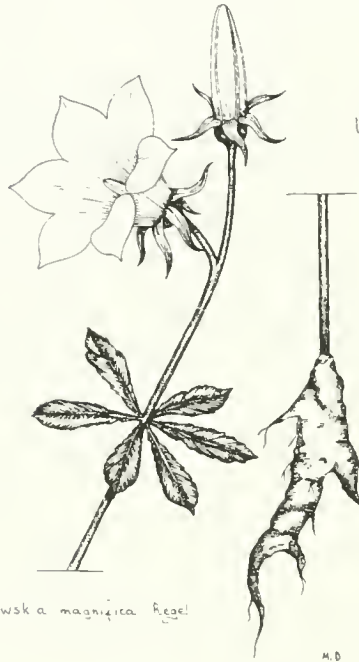
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# Flowers in Russian Gardens

MICHAEL DIEV

(translated by Olga D. Ivitskaya)



Like other flower growers all over the world, Russian amateur gardeners fall into two categories: aesthetes and collectors. The former consider their gardens as arrangements; the latter, as reservations. However, more often than not, one can come across gardens containing both exposition and collection. Before the restructuring process (“perestrojka”) in Russia began, Russian town dwellers had been given allotments of six “sotok” (one “sotka” equals 1/100 hectare; one hectare equals 2.741 acres) for building summer houses and planting flowers. The modern standard is 15 sotok.

Moscow suburb area mostly comprises miniature pre-perestrojka gardens, among which one can sometimes find showpieces of landscape design. And some of these toy-like allotments house up to 1,000 species of plants.

Russia is a vast country rich in plant resources. A great number of

the decorative plants of Russian flora have never been cultivated; many are still grown by only a few amateur flower enthusiasts. The climate of the central European part of Russia, being quite severe (temperatures sometimes falling to as low as minus 40 celsius in Moscow), but drier than that of Western Europe, allows cultivation of many Middle and Central Asian species, including some heat-loving ones.

Strange as it may seem, the small amount of rain in summer is the main factor of *Eremurus*' continuing stability, as well as for *Iris darwasica* and other underground-stemmed southern plants.

You can encounter *Fritillaria walujewii*—a wonderful rare plant with pink, spotted flowers, *Iris (Iridodictyum) kolpakowskianum*, dwarf Bludov iris with yellow flowers, and even *Ostrowskia magnifica*, an ancient Middle Asian bellflower with pink flowers up to eight inches in diameter.

Naturally, not every flower garden enthusiast advertises their own collection, even within their circle. And certainly not everyone makes a business out of it, but, to quote Gorbachev, “the process is in full swing”—in our case, the process of experimenting with and cultivating magnificent new species of plants. Despite the fact that the majority of the population here currently lives below the poverty level, Russian people are on the whole still well-educated. Many have a degree, often in biology. And although they manage to survive without money, they will never do without plants.

Michael Diev works at Agbina, a Russian firm selling seed from a wide range of material. Agbina's address is PO Box 7, 105023 Moscow, Russia. The telephone number is (095) 516-5318; fax, (095) 516-7615; e-mail: alex@agbina.msk.ru.

Illustrations: Michael Diev

## CAMPBELL'S COUNTRY GARDENS

### Part of the Community

Greg Campbell came to Thornton “just for the summer” from Harrisburg, Pennsylvania, in 1975. He never left. He worked in the ski resorts awhile, but a degree in math and science from Harrisburg Community College got him a job as a lab technician at the Waterville Valley water treatment plant. He’s been there 18 years.

Campbell’s Country Gardens is on the land where Lynne grew up. Her mother lives in a house on the property; the meadow alongside is Lynne’s grandmother’s field. An aunt lives across the road; an uncle, down the street. “The family used to have crops and cows and a horse or two,” Lynne says. Now, most of the farming is inside the greenhouses.

For the first few years after they married, Greg and Lynne did have a garden where the main greenhouse now stands. “It was big,” Greg says, “about 50’x50’—big enough for me to buy a new rototiller. We grew vegetables and flowers and sold to local restaurants. We also had a small greenhouse at our house (a quarter mile up the road) where we started the seedlings. We both like working with plants, so after Adrienne was born and Lynne wanted to spend more time at home (she’d previously worked as office manager in one of the local hotels), we decided to set up a greenhouse and see if we could grow plants for spring sales.

“I wanted a 45-footer—‘Do you know how big that is?’ I said, but Lynne insisted that it wouldn’t be enough. In 1995, we bought a 28’x96’ hoop-style frame from Ed Person. It

was delivered in October; we had it up and covered by November.”

The two-acre property is bisected by a drainage ditch. Lynne’s mother’s house is on one side; the greenhouse is placed in the center of the other. It’s sensible and straight-forward: double-poly, ground cover on the floor, wall fans at the south end; shutters at the north; four horizontal air flow fans; propane-run furnace—“we use propane at work; the system never seems to require maintenance.” Shade cloth keeps the temperature down in warm weather.

Two rows of 4’x8’ wood-and-wire benches run down the center. Narrower 3’x8’ benches run along the walls. Smaller units (2’x6’) are placed on top of the center benches to create two-tiered displays. Conduit pipe bolted to the frame is used to hold hangers. Potting is done at one end. Tidiness is important—for pest control and for making it an attractive place to shop—word gets around if your houses aren’t clean.

The business has three seasons: spring (the longest and most involved), fall, and Christmas.

Preparation for spring starts in February, when seeds are hand-sown into trays. The trays, with propagation domes set on top, are set on capillary matting on a greenhouse bench; trays of the more difficult to germinate are on a heating pad. By March, Lynne, her mother Charlotte, and her sister Brenda are transplanting the seedlings into 806s.

Plugs are bought in as well. Pan-sies were grown from plugs this year—it was quicker: the warmer

weather of the last couple years has had customers looking for color earlier.

Everything is fed via a Dozatron a 150ppm feed once a day; heavy feeders—particularly some of the hanging—are given controlled release fertilizer tablets as well.

“We were open this year during weekends in April. We play it according to weather, but the first weekend in May is official.” From then on, Lynne runs the place while Greg’s at work, with Greg helping evenings, weekends, and days off. Bedding plants are bright and traditional—geraniums, marigolds, salvia—but some trends are reflected (ipomeea is here). There’s a strong selection of accent plants—several types of *Helichrysum petiolatum*, lamium, dusty miller, a white lobelia, a vining plectranthes—“this is what people use.”

Although there are a lot of summer people in the area, locals—from Thornton, Campton, Lincoln, some from Plymouth—are the customer base. Many grow vegetables and a wide range—tomatoes (“at least a dozen types”), peppers, cucumbers, squash—is offered. The season is short—from the last full moon in May (this year the temperature fell to 34F on June 14) until late August—although last year, there was no frost until mid-September.

HANGERS ARE BEGUN in early March. Campbell’s produces 600—ivy geraniums, impatiens, supertunias, proven winners—in both ten- and twelve-inch sizes. Million bells are very popular—“we start it early—it’s

a slow grower, but the blue is a great blue and one of our best sellers.”

One watering line has spaghetti tubes for 135 hangers; the rest are hand-watered. “In May, 300 hangers are in the retail house. I worry about shade and overcrowding, but they move out fast.”

This year, Campbell’s also grew 150 twelve-inch double-begonias—chosen for both their bright color and easy care—to be hung in Waterville Valley’s main square.

“We try to help people—if someone’s planting too early, we tell them, even if it means losing a sale. ‘Keep on a protected porch;’ ‘Water once a day in sunny weather’—we give lots of practical advice. It helps—Campton Mobil had our supertunia hangers still in December, with snow on them. But we’ve stopped growing fuchsia—people let them dry out.”

They buy in a broad selection of hardy perennials. Again, customers prefer the traditional—pink bleeding heart, not white. Material’s displayed on weed mat to the left of the greenhouse. Future plans include putting up a 14’x60’ frame over which shade cloth can be pulled on sunny days.

Campbell’s closes in mid-June. There are no discounts, no sales: “The amount of material thrown away is small compared with the amount we’ve sold. It wouldn’t be fair to someone who bought something at the full price to come back a week later and find it 50% off.”

Crowding has become a problem—there’s simply not enough room for the amount of crop they’ve found they can sell. So, last year, they put up a 28’x45’ double-poly hoop house in the rear of the property on the other side of the drainage ditch. It’s not completely finished (no heat, no benches), but was used to grow

some of this year’s crop. Material was transferred to the retail house as needed. (Future plans now include a small bridge that would allow Greg to bring material in his truck to the retail house without having to go up onto the road.)

And they’ve been given two forty-footer frames by a customer with land on the Cape that is zoned “residential.” These would also be production houses. Exact placement is undecided (“If we knew how suc-



cessful this was going to be when we first started, we’d have placed the first house in a different position”), but behind the retail house and perpendicular to it seems most logical.

They sell material to three inns for their plantings, and for one—Valley Inn—they do the planting and summer maintenance as well, but July and August is for the family—Adrienne (4 1/2 years) and Justin (ten months).

FALL BEGINS around August 28 when the mums—pots, hangers, a few bushel baskets (they buy in)—arrive and are set out front, just behind the sign. The display is its own advertisement.

Other material includes asters, sedum, kale, and cabbage. Decorative items—gourds (they grow these

themselves from any seedlings left after spring sales), 600 pumpkins, Indian corn, corn stalks—are offered as well. Mums are gone by the third week in September, but they’re open until late October. Pumpkin buyers are seen as either “decorators” or “carvers:” staying open until Halloween accommodates the latter.

Once the greenhouse closes, preparations are immediately underway for Christmas. Greg gathers balsam, cutting lower branches from trees in areas owned by loggers (“Basically, I’m helping them out”). Lynne, Brenda, and Charlotte make over 300 wreaths, decorating some, making others to order.

Trees (300 last year) are bought from Toad Hill Farms in Canaan, Vermont—a producer who can deal happily with small quantities. Poinsettias, kissing balls, and boxwood topiaries (a new item that seems to be growing in popularity) are bought in. And, on the weekend after Thanksgiving, Campbell’s County Gardens opens for the third time of the year.

Lynne creates three newsletters each year—in the spring and fall and at Christmas. Its eight pages are filled with meditations about the landscape, practical tips, and plant-oriented ways to celebrate the season. The mailing list has grown to 650; some go to summer residents in their home states, but most are sent to people in the community.

The smaller towns up here are still communities and the best advertising is simply being part of one. People buy from people they know. And, if you’re within a community, you know your place. Other greenhouses are nearby, but they have their own clientele: “There’s still room for everyone.” (BP)

*Campbell’s Country Gardens is at 1322 Mad River Road in Thornton. The telephone number is 603-726-8843.*

# Overwintering Herbaceous Perennials in Containers

LINDA BILODEAU, PETER VAN BERKUM, AND PAUL FISHER

In northern nurseries, overwintering is a major limiting factor in plant production for growers of containerized perennials. Finding the most cost-effective way to prevent winter injury and reduce losses is a challenge. The ability of containerized perennials to withstand cold temperatures during overwintering is limited and varies between species (Iles and Agnew, 1995). Inadequate winter temperature control (extremes in warm or cold temperatures) can cause plant death or can delay spring regrowth (Herrick and Perry, 1995). Temperatures that are too warm during late winter can also induce spindly growth that make plants sensitive to freezing temperatures during spring.

Profitability is the deciding factor in choosing the overwintering method that will ensure the highest plant survival. Ease of installation, cost of supplies, labor, reusability, and effective protection all need to be considered. Structureless protective coverings vary in price as well as effectiveness and are easy to install and maintain (Iles et al., 1993). An excellent cost analysis of overwintering was undertaken by Beattie (1986), who found that for zone 5-6, the cost to overwinter plants was \$0.25/sq.ft. for no cover (because of fixed costs such as fungicides and pest bait blocks), \$0.31/sq.ft. for one layer of microfoam, \$0.60/sq.ft. for an unheated greenhouse with a single layer of plastic and microfoam over plants, and \$0.92/sq.ft. for a heated greenhouse with a double layer of plastic (1984 dollars).

Research was conducted at the Van Berkum Nursery in Deerfield,

New Hampshire, during the 1997-98 and 1998-99 winters to compare the effects of different combinations of protective coverings, media types, and pot sizes on survival of herbaceous perennial crops in containers. The objectives were to quantify (1) what soil temperatures were encountered under protected and unprotected environments; (2) how covering affected survival and vigor of several herbaceous perennials; and (3) whether media type or pot size affected plant survival.

Six species were used in this trial: *Aquilegia chrysantha*, *Asclepias tuberosa*, *Dicentra eximia* (1997 only), *Geranium endressii* 'Wargrave Pink' (1997 only), *Lobelia cardinalis*, and *Phlox paniculata* 'David.' Transplants of each species were planted individually into 2.5 qt. square plastic pots on August 12, 1997 (1997 trial) or September 10, 1998 (1998 trial), with ten plants for each combination of covering, medium, and species.

The majority of plants were grown in Fafard 51 media (20% peat/20% coarse perlite/60% pine bark). Some perennials were also planted in Fafard 50 and 52, ProGro PX3, and blends of Fafard 51 or ProGro PX3 with perlite (1:1 or 5:1 ratio) that provided different ratios of peat, bark, perlite, and vermiculite. In 1997, we planted ten of each species into Fafard 51 in a 4-inch diameter PVC pipe, 11 inches deep, taped on the bottom.

Plants were overwintered from late November until late March each year, in each of the following growing conditions: outside with no protection; outside with single foam; outside with single foam and fleec; inside a

heated greenhouse (temperature maintained at a minimum of 32F); and inside an unheated greenhouse with unlaminated microfoam cover. Protective coverings used included single laminated polyethylene foam (3/8" thick), non-woven fleec, unlaminated microfoam (used as a blanket inside the unheated greenhouse), and white polyethylene greenhouse covering (6 ml).

Small Hobo™ data loggers were used to record air and soil temperatures every 2 hours 15 minutes from November until March under each cover. Snow depth was recorded weekly. Plants were moved from Van Berkum Nursery to an unheated greenhouse at UNH Woodman Horticultural Farm in early April each year. In May and June, roots and shoots of each individual plant were inspected, and plants were rated using a three-point scale: 1=dead, 2=stressed or weak (sufficient damage to affect market value of the plant), or 3=healthy.

## RESULTS

### Effect of Coverings on Soil Temperature:

Temperatures are summarized in Table 1 and soil temperature data for 1997-98 is also shown in Figure 1. Minimum air temperature was lower than soil temperature in all the environments (Table 1), and maximum air temperature was higher than soil temperatures. The daily range (minimum to maximum) in temperature was also more extreme for ambient air than for soil temperatures in all the environments. These results are to be expected, given the insulation and buffering to temperature change of

| Year    |                      | Air Temperature (°F) | CONTAINER MEDIA TEMPERATURES (°F) |             |                 |                     |                   |
|---------|----------------------|----------------------|-----------------------------------|-------------|-----------------|---------------------|-------------------|
|         |                      |                      | unprotected                       | single foam | foam and fleece | unheated greenhouse | heated greenhouse |
| 1997-98 | Minimum <sup>1</sup> | -3                   | 2                                 | 29          | 30              | 29                  | 31                |
|         | Maximum <sup>1</sup> | 80                   | 61                                | 54          | 45              | 55                  | 55                |
|         | Average <sup>2</sup> | 31                   | 31                                | 32          | 33              | 33                  | 36                |
|         | Range <sup>3</sup>   | 19                   | 8                                 | 2           | 1               | 3                   | 7                 |
| 1998-99 | Minimum <sup>1</sup> | -10                  | -8                                | 24          | 22              | 28                  | 31                |
|         | Maximum <sup>1</sup> | 68                   | 66                                | 69          | 63              | 60                  | 58                |
|         | Average <sup>2</sup> | 28                   | 29                                | 34          | 34              | 36                  | 38                |
|         | Range <sup>3</sup>   | 15                   | 10                                | 7           | 5               | 5                   | 8                 |

Table 1. Summary of temperatures under different coverings during two winters in Deerfield, NH.

1. Minimum and maximum temperatures under each type of covering during the entire winter.

2. Average 24-hour temperature.

3. Average daily range from minimum to maximum temperature.

| Year                                       | Plant Species    | COVERING TREATMENTS |             |                 |                     |                   |
|--|------------------|---------------------|-------------|-----------------|---------------------|-------------------|
|  |                  | unprotected         | single foam | foam and fleece | unheated greenhouse | heated greenhouse |
| 1997-98                                    | <i>Aquilegia</i> | 1                   | 2.4         | 2.5             | 2.8                 | 2.7               |
|  | <i>Asclepias</i> | 1.2                 | 3           | 3               | 2.8                 | 2.4               |
|  | <i>Dicentra</i>  | 1.3                 | 2.8         | 2.8             | 2.3                 | 3                 |
|  | <i>Geranium</i>  | 1                   | 1.9         | 2.6             | 2.2                 | 3                 |
|  | <i>Lobelia</i>   | 1                   | 2.8         | 3               | missing             | 3                 |
|  | <i>Phlox</i>     | 2.2                 | 3           | 3               | animal damage       | 3                 |
| 1998-99                                    | <i>Aquilegia</i> | 1                   | 2.4         | 2.8             | 2                   | 2.2               |
|  | <i>Asclepias</i> | 1.1                 | 1.3         | 1.2             | 2                   | 1                 |
|  | <i>Lobelia</i>   | 1                   | 2.1         | 2.9             | 1.8                 | 1.7               |
|  | <i>Phlox</i>     | 1                   | 3           | 2.8             | 2.5                 | 2.5               |
| Overall Average (across years and species) |                  | 1.2                 | 2.5         | 2.7             | 2.4 <sup>2</sup>    | 2.5               |

Table 2. Average plant vigor rating<sup>1</sup> after overwintering under different coverings during 1997 and 1998 in Deerfield, NH.

1. 1 = dead, 2 = stressed or weak (sufficient damage to affect market value of the plant), or 3 = healthy.

2. Assumes that *Lobelia* and *Phlox* would have completely survived in the unheated greenhouse in 1997-98.

media and coverings. 1998-99 was a cooler winter than 1997-98, with the unprotected media dropping to -8F in 1998-99, compared with 2F in 1997-98.

All of the coverings were very effective at raising the minimum soil temperature. Minimum soil temperature, even under the single foam blanket, was 27F higher than unprotected soil temperature in 1997-98 (29F compared with 2F), and was 32F higher than unprotected soil temperature in 1998-99. During both years of trialling, single foam, foam and fleece, and unprotected

greenhouse environments had very similar minimum, maximum, and average temperatures. Minimum and average temperatures in the heated greenhouse were warmer than in the other environments.

The graph of temperatures over time (Figure 1) for 1997-98 shows that all coverings were effective at maintaining stable temperatures at around freezing even though unprotected soil temperature dropped below 15F on five different occasions. The foam and fleece had less of a temperature range (overall maximum, overall minimum, and daily

range), compared with the single foam blanket, and would be desirable to reduce freeze/thaw cycles.

#### Effect of Coverings on Plant Survival:

Adequate snow cover can act as an insulator protecting hardy plants from fluctuating temperatures (Perry, 1997). However, partly because unprotected containerized plants lacked consistent or adequate snow cover in both years tested, they were susceptible to cold temperatures that severely reduced their survival. Plants that had did not survive without

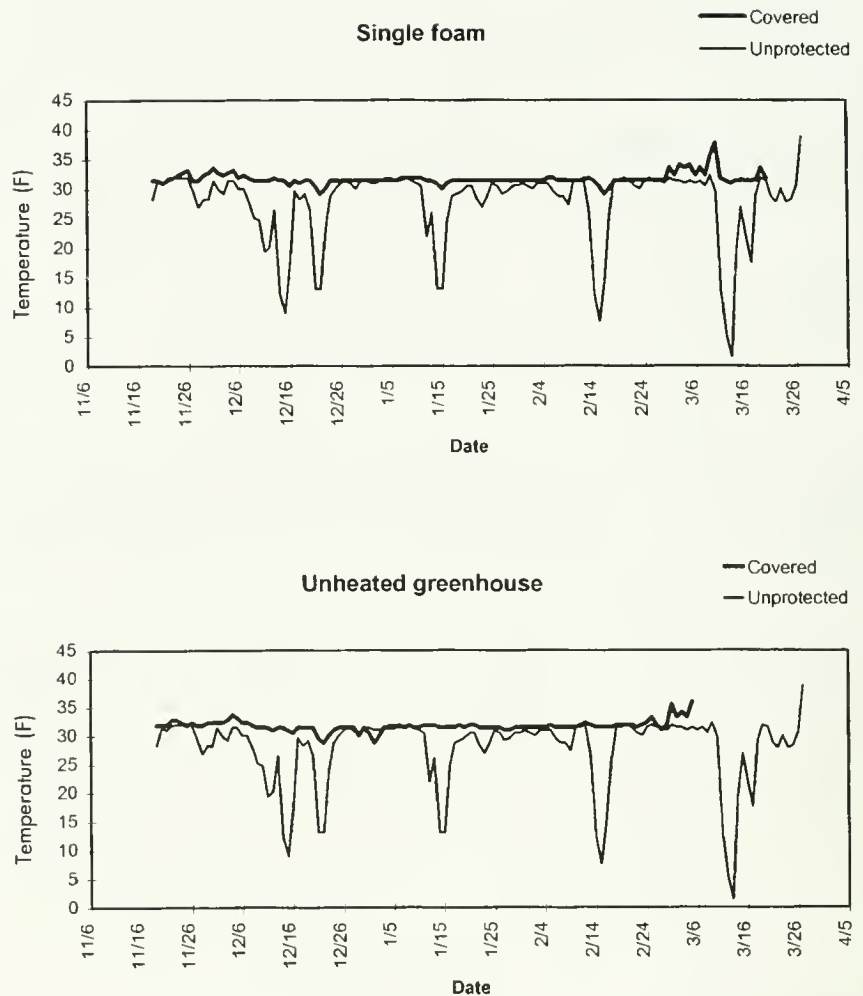
protection included *Aquilegia chrysantha*, *Geranium endressii*, and *Lobelia cardinalis*. Only 10% of *Asclepias tuberosa* (1997 and 1998) and 25% of *Dicentra eximia* (1997) survived without protection. 60% of *Phlox paniculata* survived without protection in 1997-98, but all unprotected *Phlox* died in the cooler temperatures of 1998-99.

Table 2 summarizes the vigor of plants grown under the different coverings. Survival was generally lower in 1998-99 than 1997-98, particularly for *Asclepias tuberosa*. Lower survival may have resulted from cooler temperatures and a later planting date in 1998, compared with 1997. All of the coverings resulted in similar vigor when averaged over the two years, and results were considerably better than under unprotected conditions.

However, growth after being in the heated greenhouse was different than growth after being under the other coverings. Plants grown in the heated greenhouse during 1997-98 were very large and lush early in the spring and peaked earlier than would be useful for landscape sales. We noted that these plants also tended to be susceptible to crown rot during spring regrowth. During 1998-99, it appeared that plants from the heated greenhouse had become very soft during the winter and succumbed to disease during the winter or spring.

### Effect of Media on Plant Survival:

The amount of porosity is important in container media because porosity influences water and nutrient absorption and gas exchange by the root system (Bilderback, 1982). Particle shape, size, and distribution are contributing factors of porosity. Roots, swelling, cracking, or shrinking can significantly alter the spacing of media particles (Marshall and Holmes, 1988). An ideal range for air porosity of a container medium is 20-30 percent of the total container volume (Bilderback, 1982). All media types in this trial had an initial air porosity over 20%, and air porosity decreased to 11-15% during the winter. This compaction may have been caused by irrigation, freeze/thaw cycles, and me-



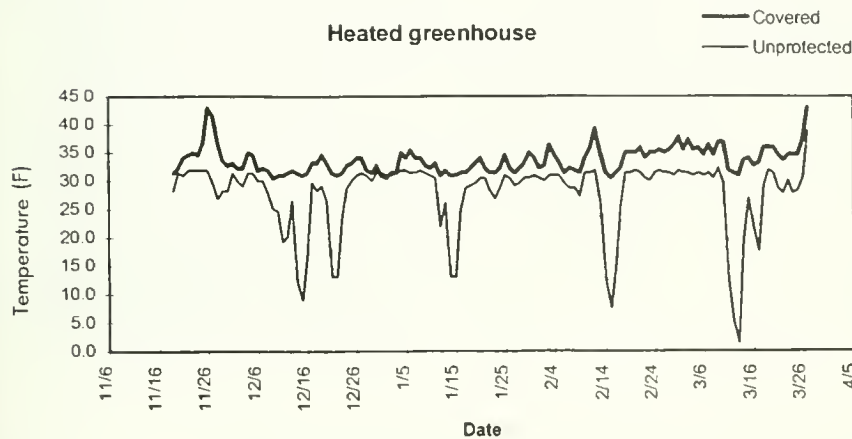
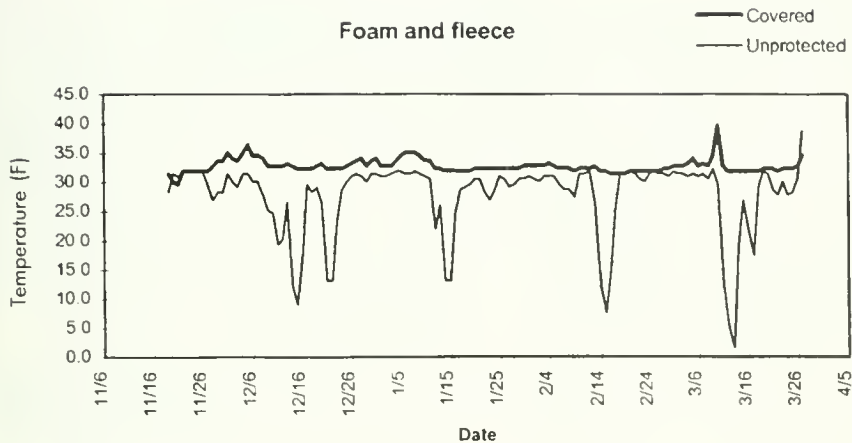
idium decomposition. However, although we tested media with a wide range of peat/bark/perlite/vermiculite ratios, there was no consistent effect of media type on plant survival.

### Effect of Pot Size on Plant Survival:

Tall pots were used to see if improved drainage was a factor in the survival of overwintered herbaceous perennials in containers. Because containers act as a perched water table, as the height of the container (and water column) increases, water retention decreases. Therefore tall containers effectively have increased drainage compared with short containers (Swanson, 1989). Roots of the surviving plants in our trial grew sufficiently to fill the tall and standard pots. However, container height did not affect survival of plants in this trial.

### So what did we learn from our two years of experiments?

- Protection of container perennials using a synthetic cover was clearly essential for plant survival, with almost all plants dying if uncovered.
- In the last two winters, which have been fairly mild and without a lot of snow cover, single foam, foam and fleece, and an unheated greenhouse with foam blanket all resulted in media temperatures about 30F warmer than the minimum temperature in an unprotected container.
- Simple portable data loggers (costing around \$80 each) provided useful data that can help inform growers on winter temperatures under different environments.
- Single foam, foam and fleece, an unheated greenhouse with foam blan-



ket, and a heated greenhouse resulted in similar plant survival.

- A heated greenhouse for overwintering these species may be most effective if run with a thermostat setting below freezing to protect against severe drops in temperature and with good ventilation in the spring to avoid soft regrowth that would be susceptible to disease.
- Single foam is clearly the cheapest (and easiest to install) of the coverings tested, but it is important to note that growers should plan for protection under more severe conditions than those in which we tested. Although we did not see major differences between unheated coverings, we assume that adding more layers of protection would increase plant survival in lower temperatures. The cost of crop losses are likely to far outweigh costs of adding another layer of covering or building a greenhouse

structure—and these potential crop losses should be considered by growers when deciding on an overwintering system.

- The project generated worthwhile information, but running temperature trials over more severe winter conditions is important to develop a tougher evaluation of these overwintering materials.
- Media and container size were not as important as plant temperature in determining winter survival.

*Linda Bilodeau worked on this project for her B.S. honors dissertation with Dr. Paul Fisher at the Department of Plant Biology, University of New Hampshire. Peter van Berkum is co-owner of Van Berkum Nursery. Funding was provided by the UNH Agricultural Experiment Station and plant material was donated by Van Berkum Nursery.*

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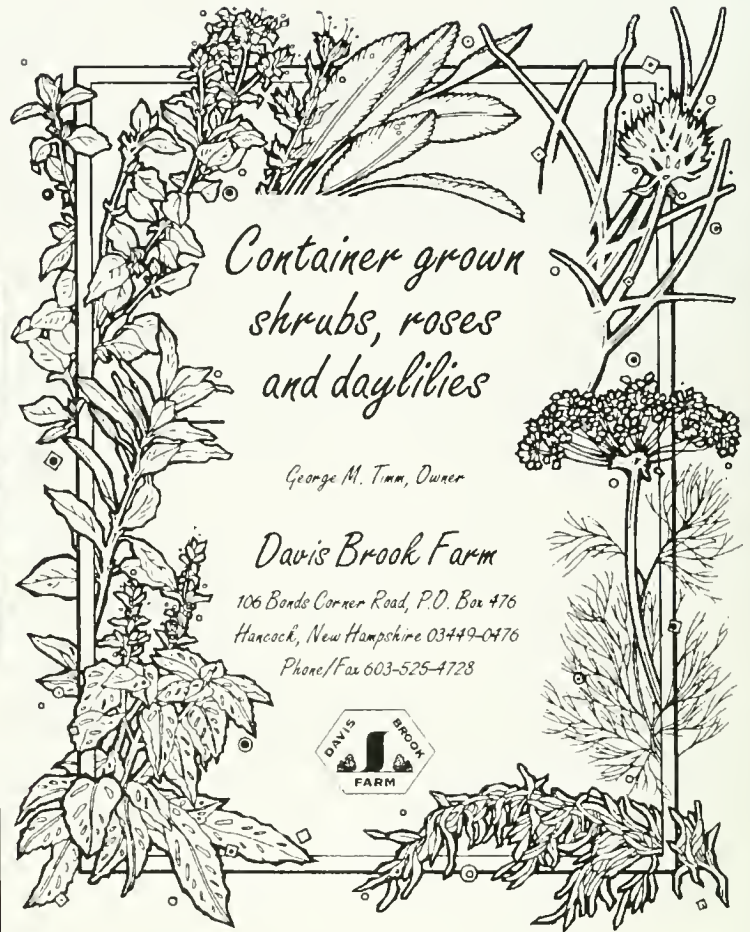


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**H**azy, hot, and humid . . . it sure seemed like we skipped spring. And to add insult to injury, drought conditions prevailed as well. We did get some minor relief from the drought with the thunderstorms in early July, but they brought another set of problems thanks to the damaging winds! Although we didn't have a repeat of last year's wet June, the hot, humid weather has caused many of our 'typical' summer diseases to appear early, particularly on turfgrass.

The high humidity and warm evening temperatures favored the development of turf diseases such as brown patch and pythium blight. Pythium also caused significant problems on newly seeded lawns because of the need for frequent irrigation (thus wet foliage for extended periods). It is important to remember to avoid excessive nitro-

gen use during warm, humid weather. Also, avoid mowing wet turf since this will easily spread pythium and other foliar diseases.

Drought-stress symptoms began to appear on many woody plants in mid-June. Marginal browning (necrosis) was the most common symptom noted on maples, dogwoods and lilacs. Leaf yellowing and early leaf drop were also common on birches (similar to last summer). Drought stressed trees and shrubs will be more susceptible to winter injury, fungal tip blights, cankers, and insect attack. It's important to water trees and shrubs during drought, particularly those in a lawn setting where the grass competes for the available moisture. A soaker hose or regular garden hose set a slow trickle should be used to provide a minimum of one inch of water per week.

A late frost in early May caused damage to many trees including crabapple, dogwood, lilac, and fir. Several fir samples received by the Plant Diagnostic Lab (PDL) were diagnosed with phomopsis canker at the soil line. The canker was initiated during late spring frosts last year (1998). The frost-injured tissue is easily colonized by phomopsis, resulting in a girdling canker. We can expect to see similar cankers next year thanks to the late frost this year.

One would think that fungal and bacterial diseases would not be a problem due to the lack of rainfall. Unfortunately, that hasn't been the case. The little rainfall that we did receive occurred at just the right time (during leaf and shoot expansion) for infections to occur. Gymnosporangium rusts are prevalent again this year, although not quite as dramatic as last. Cedar-



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apple rust produced spectacular galls on junipers and ample leaf and fruit infections on the deciduous hosts. Ash leaf rust brought a flood of samples to the PDL and calls to the county Extension offices. Ash leaf rust is a sporadic disease causing striking orange spots and distorted growth on white and green ash. Mountain ash, which belongs to a different family, is not affected. The alternate host for ash leaf rust is cord grass, which inhabits salt marshes. Thus, we rarely see this rust further than 10-20 miles from the seacoast.

Anthracnose on sycamore was prevalent in several areas, causing leaf drop by late June. Many American elms were showing significant symptoms of Dutch elm disease (DED) by mid-June. DED

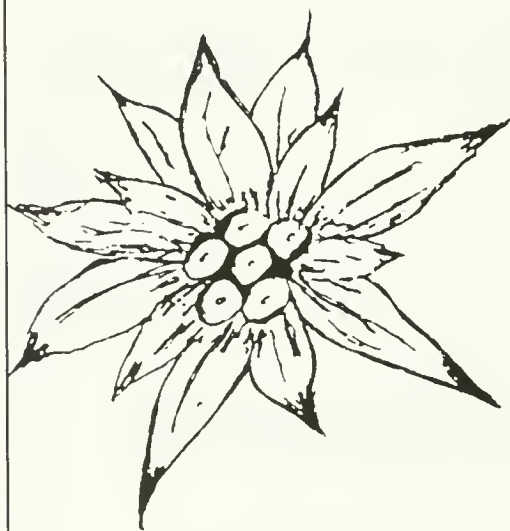
is accelerated by drought stress. (The same pattern developed in the 1993 and 1996 growing seasons). Many *Prunus* species, particularly sand cherries, exhibited dieback this spring due to brown rot shoot blight (*Monilinia* shoot blight). A few other diseases have also been common on woody plants this season: bacterial blight on lilac; peach leaf curl; oak leaf blister; and leaf and flower gall on azalea.

Many of the 'usual' diseases on annuals and perennials have been kept 'at bay' thanks to the dry weather. Botrytis blight and powdery mildew are the two exceptions. Both diseases are favored by high humidity. Good air circulation and sanitation are essential to managing these two diseases. When these diseases begin to cause

problems early in the season, fungicides are usually required to keep losses to a minimum.

As a final note, The Plant Diagnostic Lab will be closed August 4-13. I will be attending the annual plant pathology meetings in Montreal, Canada.

*If you wish to submit plant material to the UNH-PDL for diagnosis, send samples (with a check for \$12.00) to: The UNH Plant Diagnostic Lab, C/O Dr. Cheryl Smith, Plant Biology Department, 241 Spaulding Hall-UNH, Durham, NH 03824. Samples should be accompanied by an identification form (available from your county Cooperative Extension office). Cheryl Smith is the UNH Cooperative Extension Specialist in Plant Health, and can be reached at 603-862-3841.*



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NOTES

## The Number One Concern

Unless you've been out of the country for the past year, you're probably aware that there's a labor shortage here. Everywhere I travel, the number one concern that growers share with me is the availability of labor. In most nursery and greenhouse operations, labor can be up to 80% of their costs. What's even more daunting is that this doesn't look as if it will be changing any time soon.

Growers who recognize this have begun to mechanize their operations as much as possible. Most operations now use some sort of computer for billing, receivables, etc. But it's in production that I suspect the biggest changes will occur. Not too many years ago, injectors and controlled release fertilizers were unusual; now they're the norm, due in part to labor costs. Fewer people are making their own soil mix—not because they're dissatisfied with their mix, but because of lack of labor and time. Seeders are often the norm. Watering, one of the most labor-intensive operations in a greenhouse, has changed. Many larger growers are going to ebb-and-flood; automatic booms have become commonplace. Transplanters and potting machines, used previously in only the larger operations, are making their way into smaller and smaller firms. Belts and carts are everywhere, helping to reduce hand labor.

What makes this trend so interesting is that, previously, people would wonder how these large operations could afford this large equipment expense for a flat of annuals or two-gallon juniper.

But it appears they were ahead on this learning curve regarding the labor issue. Being more efficient with less labor may have a high start-up cost, but will pay huge dividends in the time to come.

*Jim Zablocki, Technical Manager of the Northern Horticultural Group, the Scotts Company, can be reached at 603-224-5583.*

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The world’s largest saffron producer is Spain, but here in America—in Lancaster County, Pennsylvania, the Amish and Mennonites grow and harvest this golden treasure. They consider it not the most valuable spice in the world, but the essence of their down-to-earth American farm food. Chicken pot pie, egg noodle casserole, and saffron tea cake

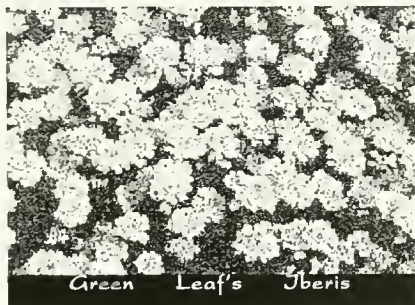
Dutch without saffron.

In 1983, I read in an organic gardening magazine an article that told how to grow your own saffron. Naturally, I gave it a try. It’s so easy that I’m amazed that more gardeners don’t do it on a regular basis. The flower—a lovely light violet-blue—blooms in the fall of the year, a wonderful time for such a garden surprise. The leaves are grass-like and appear in summer, ahead of the flowers. The plant, grown from corms, is small and makes a perfect potful, making the harvest of your own valuable and tasty saffron threads incredibly easy. You can find saffron in several bulb catalogs.

If you really want to grow your own saffron, now is the time to order the *Crocus sativus* corms. These are not always readily available at garden

planted earlier in the fall than most other bulbs. You can order them from Bundles of Bulbs, 7091 North River Road, New Hope, PA 18938 (telephone is 410-581-2188; catalog is free). They’re shipped in August so they can be planted immediately and begin blooming in October. Saffron crocus bulbs need alkaline soil, are hardy in USDA zones 5-8, and do wonderfully in pots.

Finally, here’s the easiest and best-tasting chicken recipe you could ever hope to make. If you want to impress someone with your culinary skills, this is the recipe for you. It comes from a magazine called “Savour,” a culinary delight in itself. In the May/June, 1995, issue, you’ll find a fascinating article (lots of information plus wonderful recipes) about saffron by Sally Schneider along with color



## The Horticultural Web

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you go to your library and see if this issue is on file.

**Roast Chicken with Saffron and Lemon**

Preheat oven to 400 degrees. Wash and pat dry a three-pound chicken. Grind, using a mortar and pestle, one large pinch of saffron (lightly toasted first in a hot pan), with two teaspoons of salt and a quarter teaspoon of black peppercorns. (Note:

according to Penzey's Herb and Spice Catalog, a small pinch of saffron equals about 20 threads; a medium pinch, 35 threads; and a large, 50 threads.)

Use your fingers to gently separate the skin of the bird from the flesh. Rub spices over and under the skin and inside the cavity. Tuck the wings under the back and tie the bird with kitchen string to hold the legs together for

even cooking. Place in a baking pan and bake for one hour.

This simple procedure produces so flavorful a bird, excellent with the homey accompaniments of potato and vegetable.

Saffron may be the most expensive spice in the world, but it's well within our reach if we grow our own!

*Tanya Jackson, a well-known area herbalist, can be reached at 603-431-8011.*

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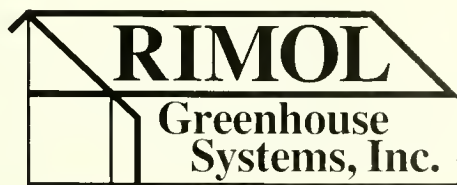
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## The Second Twilight Meeting of the Year

**O**n Wednesday, September 15, from late afternoon until dark, the New Hampshire Plant Growers' Association will have its second Twilight Meeting of the year at Van Berkum Nursery, 4 James Road, Deerfield.

This twilight meeting is combined with Van Berkum Nursery's annual open house. Van Berkum, a wholesale perennial nursery, has continued to expand in size and variety. Even for those who've visited recently, there'll be new things to see.

There are tours—one of the actual operation—the potting facility, the greenhouses...; a second of the show gardens and new introductions.

Good home-cooked food has become a tradition and adds to the general sociability.

Members will receive a flier with details and directions. For more, contact Leslie and Peter van Berkum at 603-463-7663.

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