

The **Cut Flower**

Q U A R T E R L Y

Association of Specialty Cut Flower Growers Inc.

Cut Poinsettias - Return of an Old Favorite
Update on Aphid Control
Filmmaker Turned Flower Grower

for growers of field and specialty greenhouse cuts

Inside this Issue

Letter from the President.....	3	Research Update.....	21
Cut Poinsettias.....	5	IPM Update.....	23
Culture Profile.....	6	Regional Reports.....	27
Grower Profile.....	10	Classifieds.....	33
Postharvest.....	15	ASCFG News.....	34
Back to Basics.....	16	Letter from Oberlin.....	39
Lemons and Lemonade.....	20		

photo by Bob Stamps

Culture Profile - page 6



The Cut Flower QUARTERLY

is published by:

The Association of Specialty Cut
Flower Growers, Inc.
MPO Box 268

Oberlin, OH 44074

Judy Marriott Laushman, editor.

Linda Twining, layout.

2003 ASCFG

ISSN 1068-8013

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PUBLISHING SCHEDULE

Issue	Deadline
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Spring	March 1
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Summer	June 1
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Fall	September 1
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Winter	December 1
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All articles, features, display and classified advertising must be received by these deadlines for publication.

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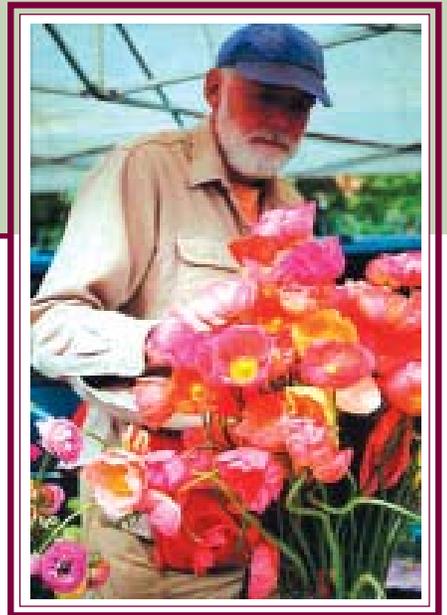
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Letter from the President

by Bob Wollam, Wollam Gardens



You will see somewhere in this magazine that it's time to think about elections for the Board of Directors that will be held later this summer. I hope some of you will consider it. In the past year I have had a number of members ask me just how this organization is run and how our Board works. Here is my perspective on these two questions.

With the formation of the ASCFG in 1988, a Board of Directors was elected to oversee the organization, set goals, and support the Executive Director. From the beginning, and for the most part, the Board has been proactive. Today we have 14 Board Members, including eight Regional

The ASCFG is run by Judy Laushman, our Executive Director from the inception of this organization in 1988. Judy had worked for three years with Allan Armitage at the University of Georgia and seemed a logical choice to organize a national organization of specialty cut flower growers. Judy moved to Oberlin, Ohio in 1989, and after four years of working from her home, found an office overlooking the town square, and set up shop.

Through the years the organization has grown to over 600 members. Various part-time office workers and freelance graphic artists helped present a professional face for the ASCFG. Recently we have welcomed Linda Twining, who has come into the office on a much more permanent basis and is helping us with all kinds of graphics, including the magazine layout (how did you like our first color *Quarterly* ?), bookkeeping, Regional Meetings and other jobs that will help Judy look after more of the overall running of the organization. It's Linda's voice you hear on the office voice mail, and when she answers, she can actually help our members without having to ask Judy to call you back. Welcome aboard, Linda.

Letter from the President
continued

Directors, who serve for three years; as well as the Executive Committee (President, Vice-president, Secretary, and Treasurer) all of whom serve for two years. Executive Advisor Dr. John Dole and Executive Director Judy Laushman round out the group.

The Board usually meets twice a year for two days. We try to locate one of those meetings in a city which may be the location of a National Conference. In early March we met in Lancaster, Pennsylvania where we hope to have our 2005 meeting. Board members' expenses for the Board meeting are paid by the organization. Costs are kept low because we buy cheap airline tickets and sometimes share rooms. We work hard, but also have fun - we usually see some local farms, visit specialty nurseries and arboreta, and dine out as splendidly as our budget will allow.

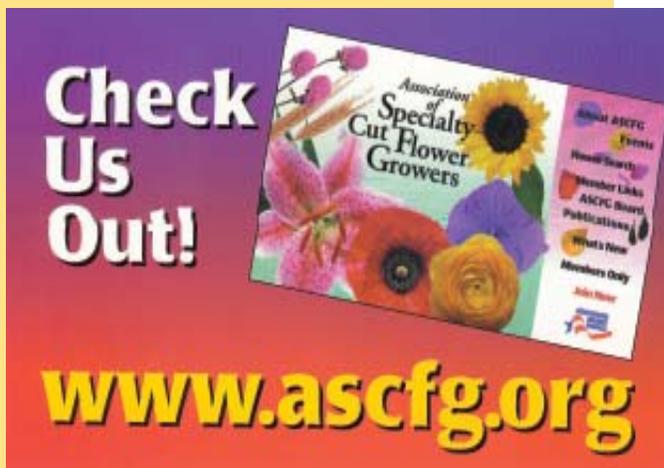
Allan Armitage says of the Board, "Even more importantly, it provides a way to give back to the industry. None of us was successful all by ourselves, and it is a nice, painless and actually enjoyable way to help others. It is a good feeling."

This column may clear up some questions you may have had about ASCFG. Maybe it also made you consider running for the Board. Our interest is in having active Board members who want to support an organization that helps its members. How about you?

Bib

Use the ASCFG home page to find:

- ◆ Information on ASCFG Regional Meetings
- ◆ Updates on National Conferences
- ◆ Links to other floral organizations and industry associations
- ◆ ASCFG Forum - exchange of ideas news and references from growers archived and easily accessed

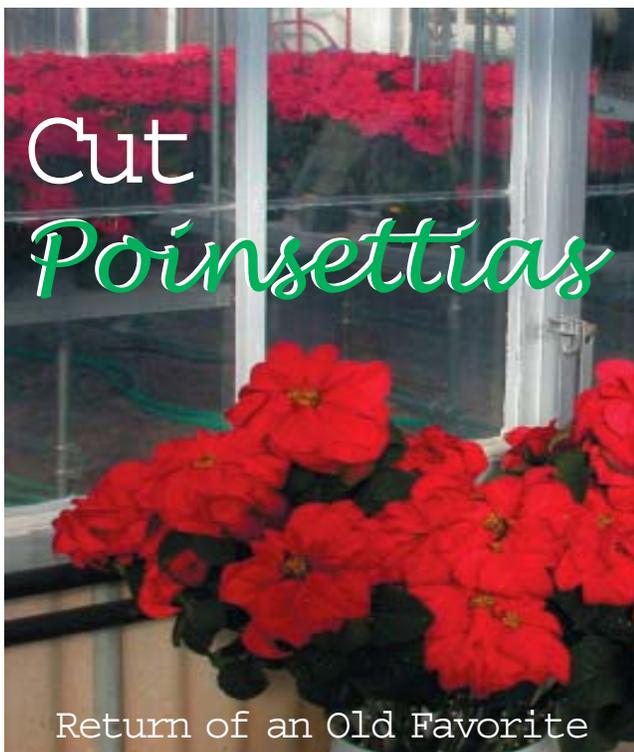


The first 300 people to register for the Vancouver National Conference will receive an umbrella with the ASCFG logo. We're not expecting rain, but it helps to be prepared. For more information on the 2003 National Conference, see page 36.



Plan for Vancouver now!

An advertisement for Calla Hybrids. It features a large, vibrant calla lily in shades of yellow, purple, and orange. The text "Signature Collection" is written in a large, elegant script font. Below the lily, the text "World's Newest & Best Performing Calla Hybrids" is written in a smaller font. At the bottom, contact information is provided: "9455 Kilchis River Rd. Tillamook, OR 97141", "(503) 815-3762 phone", "(503) 815-9326 fax", "sales@flowersbulbs.com", and "www.FlowersBulbs.com". A blue banner at the very bottom says "Call or e-mail to receive brochure & latest availability".



by Frank and Pamela Arnosky
Texas Specialty Cut Flowers, Blanco, Texas

If you read any greenhouse trade publication these days, you'll see that potted poinsettia growers are singing the blues. We know - we've grown potted poinsettias for 16 years. The cost of supplies has skyrocketed, and propane costs are up 300% from what we paid in 1986. At the same time, the big chains like Home Depot and Lowe's are retailing a 6-inch potted poinsettia for almost half of what we need to get for our 4-inch pots - wholesale! They sell them as a loss-leader, but every year the pressure is on the grower to come down even more so the big guys can sell them for even less.

All this makes for a pretty dismal picture for the poinsettia-growing crowd. We've been holding our own in the market by selling a high-quality plant to upscale stores, but even they are feeling the pressure of the mass merchandisers. In 1986, we sold a 4-inch pot for \$2.25. In 2002 we were able to get \$3.00. Not a 300% increase to keep up with the propane, but certainly better than a lot of other growers. But those days are over, and we are dropping our potted poinsettia program this year.

The trouble is, poinsettias are addictive. A greenhouse grower doesn't know what to do with himself at Christmas if he's not totally stressed over his poinsettia crop. We tried to stop growing them once we became cut flower growers, but Frank says he needs a twelve-step program to get off them. He cut back to just 4-inch pots, but he couldn't shake them entirely.

A True "Renaissance" in Poinsettias

Luckily for us, the poinsettia world has come around full circle. Many years ago, poinsettias were grown as a cut flower, raised in fields in southern California. Gradually, varieties were developed for the potted trade, and cuts fell out of favor. But last year we were able to grow a crop of the new 'Renaissance' cut poinsettia, and judging from the customer response, we think we're on to something.

'Renaissance' cut poinsettias are a 'Winter Rose' type of novelty poinsettia. The colored bracts don't spread out flat like a typical poinsettia. Instead, they curl under themselves into a ball-shaped flower head that vaguely resembles a rose. The leaves also curl, and look like holly. 'Winter Rose' was released several years ago as a potted crop. The growers hated it. But the costumers loved it. It is now available in many colors.

The 'Renaissance' poinsettia is a giant version of the 'Winter Rose'. The main difference is that rather than branching like a potted plant, this variety throws up huge, cane-like stems topped with large bracts. The result is spectacular. We have grown stems up to four feet long, with flowers 10 inches wide! Response from florists, wholesalers, and customers has been in the "Oh my gosh, where did you get those?" category.

continued on page 25

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Culture Profile

by John Dole



Liatris gay feather, blazing star

Excerpted from the forthcoming Floriculture: Principles and Species, Second Edition.

By Harold F. Wilkins, John M. Dole, North Carolina State University.

Introduction

Scientific names: *Liatris spicata* is the most common species grown in commerce. *L. aspera*, *L. microcephala*, *L. pycnostachya*, and *L. scariosa* are less commonly grown. *L. callilepis*, a name commonly seen in the literature, has no botanical standing and should be considered *L. spicata*.

Family and related taxa: Compositae Giseke. Approximately 35 species occur in this genus; all of which are native to North America. These perennial herbs develop a corm or an enlarged root structure.

Origin: *L. spicata* is widely distributed in the United States from northern Minnesota to Michigan, south to Florida and Louisiana and is hardy from Zone 3 to 8. *L. pycnostachya* and *L. spicata* are found from Indiana to South Dakota, south to Texas and east to Louisiana, South Carolina and Florida. *L. scariosa* is found in the mountains of Pennsylvania south to South Carolina and Georgia. *L. aspera* is broadly distributed in eastern and central North America, while *L. microcephala* is native only to southeast United States.

Uses and current status: At one time this genus was relegated to the perennial garden; in the late 1970s and early 1980s, however, *L. spicata* quickly became an important greenhouse and field-grown cut flower. The early development of *Liatris* occurred in Israel and Europe and spread to North America, the origin of the genus. Other species are also used as cut flowers and garden ornamentals. Plants can also be grown in containers as a potted flowering plant, but height control is difficult.

The inflorescence is a long slender spike with numerous individual flowers ½ to ¾ in. (1.3 to 2.0 cm) across. The individual flowers can be closely attached (sessile) to the stem or have a peduncle. The terminal or apical buds always open first and the remaining buds mature downward. Leaves are opposite, linear and frequently form a basal rosette prior to the elongation of the floral spike.

Cultivars

Heights of the flowering spikes vary from 10 to 20 in. (25 to 51 cm) up to 5 ft (1.5 m), of which the upper third has flowers and the lower two-thirds linear leaves. ‘Kobold’ is short 1.5 to 2 ft. (45 to 60 cm) tall and may also be called ‘Goblin’ or ‘Gnome’.

Many cultivated species have white forms. For *L. spicata* there are several cultivars whose colors vary

from the natural mauve blue color to deep purple-blue, as well as creamy white.

Propagation

Plants can be propagated by corm divisions or from seed, which eventually produce corms. Cuttings can be made from young shoots. Typically, the underground storage organs are commercially harvested and graded in the autumn and cold stored for subsequent forcing. After corms are harvested and divided, they are air cured at ambient temperatures for 3 to 7 days. Smaller corms are replanted in the field or garden for summer flowering the following year.

Seed are available for heterozygous planting stock [9400 seed/oz (332/gm)]. Seed germinates in 21 to 28 days at 65 to 70°F (18 to 21°C). Armitage stated that 75 to 78°F (24 to 26°C) was best and high humidity should be maintained. Salac and Hesse reported that the best results for *L. pycnostachya* and *L. aspera* were stratification at 39°F (4°C) for 105 days and then germination at 91/66°F (33/19°C) light/dark regimes under 12-hr light from cool white fluorescent lamps.

Seed can be sown in the spring for immediate germination or in the autumn for germination the following growing season after being overwintered. *L. pycnostachya* corms will produce high quality flowers in the first year, whereas

seedlings will not produce similar cut flower yields until at least the second year. *In vitro* propagation has been reported.

Flowering Control and Dormancy

Flowering in nature occurs in late July, August and into September, depending on the species. Dormant corms are harvested in the autumn at the end of the warm summer and under shortening day lengths. Dormancy is greater in November and decreases with time. Ethylene may be involved in dormancy; the greater the degree of dormancy, the less ethylene that is produced. Ethrel (ethylene) treatment resulted in rapid shoot elongation.

Corms do not flower unless they receive a cold vernalization treatment. The longer the cold treatment the more rapid flowering occurs. Little difference existed in days to flower between corms stored for 9 or 12 weeks (90 versus 84 days to flower); however, the number of flowering stems decreased from 240 to 167. When 41 versus 32°F (5 versus 0°C) storage temperatures were compared, days to flower were not different, but 32°F (0°C) reduced the number of flowering stems. The cold requirement for flowering can be partially substituted by dipping the corms in a 500 ppm gibberellic acid (GA) solution for one hour.

The apparent dormancy in *Liatrix* can be complicated, as corms from late spring and early summer production schedules grown in subtropical areas, such as Kenya or Israel, do not develop dormancy in the field if plants are kept irrigated. Plants form vegetative rosettes of foliage in late summer and early autumn, but never flower. However, when corms are harvested in Israel during the cold

winter, little or no dormancy exists and emergence occurs.

If corms are cold treated, floral tissue initiates and develops under both SD and LD. However, rate of development is enhanced under LD conditions.

Temperature

Corms must be cold treated for rapid flowering when harvested in the summer. In Israel, only one week of 36°F (2°C) cooling will result in 30% of the corms flowering; flowering percentage increased with increasing cold storage duration. However, the flowering percentage of corms cold stored for one week increased to 50% if they received a 500 ppm GA treatment. After 5 weeks of 36°F (2°C), 60% flowered without GA; 100% flowered with the additional GA treatment. Karen-Paz et al., also from Israel, states that 9 weeks at 37°F (3°C) resulted in dormancy release. In Kenya, only 90% of corms flowered after 8 weeks of cooling at 37 to 41°F (3 to 5°C); increasing the duration of cold up to 12 weeks had no effect on percent of corms flowering. Wanjao and Waithaka found that GA₃ corm dips were beneficial even with corms cooled for 8 weeks. Moe and

Berland stated that the optimum corm treatment was 41°F (5°C) for 9 weeks followed by a one hour 500 ppm GA₃ dip.

After corms have been cold treated, soil temperature for forcing should be held below 68°F (20°C) for the first four weeks. Espinosa et al. reported that shoots emerged most rapidly at 68°F (20°C) when compared to 59, 77 or 86°F (15, 25, or 30°C). Forcing temperatures that have been reported are 63°F (17°C) in Norway and 70 to 77°F (21 to 25°C) outdoors in Kenya.

Light

Liatrix spicata is a facultative LD plant in that fewer leaves are formed under LD treatments than under SD (88 versus 156 leaves). However, plants will flower under either LD or SD. Long photoperiods will also hasten the rate of elongation. When LD are applied using incandescent lights, plants are taller and the number of flowering stems are reduced. On the other hand, under SD plants are slower to flower, shorter and produce more flowering stems. Temperature interacts with photoperiod such that cool temperatures and LD hasten flowering, but there is little response to both LD and warm temperatures. If



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Culture Profile *continued*

used, LD (natural daylengths plus 4 hr night breaks) treatments are applied during the first 5 weeks of the forcing process.

Plants are grown in full sun outdoors; when grown under protection, shade only for temperature control.

Water

Although *L. spicata* originated from moist situations and *L. pycnostachya* from dry sites, well-drained soil is used for commercial outdoor-grown *Liatris*. An open porous medium is used for good water drainage in containers. Do not overwater. On the other hand, *Liatris* will not have high flower yields unless properly irrigated, particularly during the early stages of growth when flowers are initiating and developing.

Nutrition

Armitage recommended 100 to 150 ppm N after shoots emerge when forced in a greenhouse; however, a major source of corms, Agrexco-Agriculture Export Company from Israel, recommends 100 ppm N, 20 ppm P, and 150 ppm K. With field grown *L. pycnostachya* in Nebraska, United States, 5.5 lb/yd² (3 kg/100 m²) of 10-10-10 (10N-86P-8.3K) fertilizer was sufficient for superior production and yields.

Media

With seed germination and potted plant production, a variety of commercial peat-based media is commonly used. As stated under the Water section, the medium should be well drained. A medium pH of 6.5 to

7.0 was recorded by Salac and Fitzgerald; 6 to 7 was recommended by De Hertogh.

Spacing

Commercially-available corm sizes vary in circumference from 3 1/8 to 4 7/16 in. (8 to 10 cm), 4 7/16 to 4 5/16 in. (10 to 12 cm), or 4 5/16+ in. (12+ cm). Larger corms produce greater number of stems per corm. Corms are planted 2 to 3 inches (5 to 7.5 cm) deep.

Cut flowers can be grown in rows 3 feet (1 m) apart or in beds. Corms are spaced 2 to 4 in. (5 to 12 cm) apart in rows, depending on the corm size. In beds, 80 to 100 small-sized corms are planted per yd² (96 to 120/m²) and 36 to 60 large corms per yd² (42 to 172/m²). For field plantings grown for more than one season wider spacings may be used; increasing the space per plant from 1 to 4 ft² increased the number of flowers harvested per plant but decreased the number of flowers harvest per ft² (m²).

Pinching and Disbudding

None is required or practiced. However, each individual inflorescence is capable of developing a smaller but elongated inflorescence if apical dominance is broken either by horizontally orienting the stem or by soft pinching the inflorescence when it is 3 to 4 in. (8 to 10 cm) long. Commercially, spray liatris can be produced by pruning developing inflorescences.

Moe, and Moe and Berland illustrated that 500 ppm GA₃ corm soaks for one hour increased axillary bud activity and the number of harvested flowering stems. The most pronounced GA₃ activity is with corms cooled at 32°F (0°C) for 7 weeks.

However, nine weeks of cold is the optimal cold duration for the maximum number of flowering stems (See Flower Control and Temperature sections).

Support

For greenhouse cut flower production, one to two layers of netting may be helpful. In the field, usually one layer is sufficient to prevent damage from wind.

Schedule and Timing

Moe and Berland forced corms under cover in Norway in 96, 94, 90, 84, 80, or 80 days when corms were cold stored for 3, 6, 9, 12, 15 or 18 weeks at 41°F (5°C). In Kenya, corms grown outdoors flowered an average of 90 days after being planted. Armitage and Laushman planted corms monthly in Georgia from November through March and the first date of harvest ranged from July 1 for the November and December plantings to July 21 for the March planting. Little difference existed among the planting dates in time from the first to last harvested stem, stem length and stem diameter. However, flower yield was dramatically greater for the February and March planting dates.

In Minnesota outdoors, *L. pycnostachya* is the first species to flower, then *L. aspera* and *L. spicata*. *L. punetala* is the last to flower.

Corms are frozen in moist peat at 28 to 30°F (-2 to 1°C) by commercial firms, allowing corms to be available throughout the year. When corms are thawed, do not refreeze. Thawed corms can be stored at 45°F (7°C) for up to two weeks after they are received.

Insects

Aphids, spider mite, and thrips can reduce quality. However, *Liatris* has few serious pest problems.

Diseases

Botrytis, *Sclerotinia*, *Rhizoctonia*, and *Verticillium* are potential problems. Nematodes are a serious issue if not detected and controlled. Postharvest treatment of corms with 120°F (49°C) hot water for 40 min. destroyed verticillium spores in liatris tubers but damaged buds.

Physiological Disorders

Leaf scorch or tip burning of the foliage is a problem. This disorder is frequently limited to the foliage along specific sections of the stem. The leaves are often normal above or below the affected area. Leaf scorch has been attributed to a transitory calcium deficiency due to periods of rain, high humidity and low water transpiration producing insufficient calcium uptake into young developing leaves. Moe stated that leaf scorch may be related to wide temperature shifts. Plants in both greenhouse and field are susceptible.

Postharvest

Nowak and Rudnicki recommended that stems should be harvested when 50% of the florets are open if a floral preservative is not used. Only 3 to 4 flowers should be open prior to harvest if a preservative is used. Lower foliage that would be below water should be removed. If stems are treated with a floral preservative, a vase life of up to 12 days can be expected.

Preservatives can be used as a 24 to 72-hour pulse with 5% sucrose and 200 ppm 8-hydroxyquinoline citrate (8-HQC), a common biocide, or a continuous supply of 2.5 to 5% sucrose can be used. Han, however, recommended pulses of 10% or greater sucrose for 20 hours. A biocide must be used in conjunction with sucrose; Borochoy and Keren-Paz used 0.2% 8-HQC.

Harvested stems can be stored dry at 32 to 35°F (0 to 2°C) for 5 days or 7 days if in water. In both cases, stems had been pulsed with a preservative.

Flowering stems can be air dried after the foliage has been removed. Purple flowered stems retain color well after drying.

From Specialty Cut Flowers, Second Edition, by Allan M. Armitage and Judy M. Laushman. To be released Fall 2003.

Cultivars

The only flower colors are purple and white. Purple colors are best filled by the species itself or 'Floristan Purple'. Other garden forms such as 'Kobold' are too short (12-18" tall) for cut flower production.

var. alba is white and similar to the species except for flower color.

'Floristan White' is an excellent creamy white flowered cultivar. The Floristan series may be raised from seed. White flowers are usually harvested earlier than the purple forms.

'Gloriosa' is a vigorous purple cultivar but not readily available in the United States.

Additional Species

Liatris aspera, button gayfeather, rough gayfeather, has always been an excellent cut flower and has recently been "discovered" by growers and retailers. The lilac flowers are rounded, and spaced well apart. People also enjoy the greenish to lilac cone-like flower buds; stems may be harvested even before the flowers are open. Another excellent North American native, it grows from North Dakota to Ontario and Ohio in the North, and Texas and Florida in the South.

Liatris callilepis is offered by a number of bulb growers. Taxonomically, L. callilepis is a synonym for L. spicata and plants should be treated the same. Some bulb specialists sell vegetatively-propagated plants as L. callilepis and seed-propagated material as L. spicata.

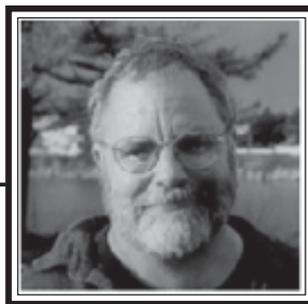
L. pycnostachya, tall gayfeather, Kansas gayfeather, is a taller, coarser plant than L. spicata. In trials in Georgia, stems were over 3' (90 cm) tall and plants persisted only 2 years. 'Eureka' is a selection developed by the University of Nebraska and the U.S. Soil Conservation Service. 'Eureka', to our knowledge, is not nationally available.

Liatris scariosa, tall gayfeather, is also useable in a cut flower program. The flowers are more button like than L. spicata and provide a handsome stem. 'September Glory' has purple flowers which open almost simultaneously and 'White Spires' has white flowers.

Grower Profile

by Will Fulton

Ed Pincus, Third Branch Flower, LLC
Roxbury, Vermont



Third Branch Flower, LLC, maintains farms in both Roxbury and Plainfield, Vermont. I interviewed Ed Pincus at his primary farm and home in frigid Roxbury from my home in tropical Kalaheo. “How’s the weather up there?” I asked, surprising him with my originality. In fact, I already had an inkling as to his response, because a considerate friend had emailed me the complete and extended weather forecast for Boston, a treat which he had been affording me, unsolicited, for many years. During my research for this interview, I had studied the atlas and had learned that Vermont was shaped like a tornado that was touching down at its southern border on the northern border of Massachusetts. So I was able to deduce that the weather in Vermont, being north of Massachusetts, and the time of year being February, would be similar to that of Boston, if not colder. (Just a little insight into the interviewing process.)

“It’s cold around here. Nights have been going under 20 below,” was his response.

“Uh huh,” I replied, knowingly, as I shooed a rooster from a banana tree with a well-thrown mango. “It’s been chilly here, too,” I said, and, brushing the soil from my bare feet, I returned to my hammock. “How do you cope?” I empathized.

“You adapt to whatever weather you have,” he said, and I silently agreed, “but then the weather surprises you. As one old-timer put it while chewing on a chew of tobacco, ‘By gawd, just when you think you got Mother Nature figured out, she zaps you one.’ We generally have a good snow cover, but then there are years - far and few between - when there is no snow. Over the years, we have chosen crops that can cope with the weather here. The drought of the past three years has taken some toll - not too serious yet, but it has been the first time in 30 years that we did not get Spring or Fall rains.”

Location, location, location

I hadn’t been able to find Roxbury on my map so I asked Ed to describe his farm and its location.

“Roxbury is in central Vermont. We are 3½ hours by truck to Boston’s airport and the Boston Flower Market. We are 7 hours by truck to the New York City Flower Market. The home farm has 130 acres - about 20 under cultivation. It’s a typical Vermont hard scrabble, hillside farm that probably had about 6 milking cows before the new sanitary regulations drove small dairy farms out of business. The farm is on a hillside at 1600 feet above sea level.” Roxbury

itself is at 1200 feet, and has doubled in size, from 300 to 600, since Ed moved there. Roxbury represents

the high point, literally, on the railroad lines going from Boston to Montreal. “It is a watershed area,” says Ed. “To the South, water flows from the Third Branch of the White into the Connecticut and then into Long Island Sound. To the North, the water flows from the Dog into the Winooski, then to Lake Champlain and ends up in the St. Lawrence Seaway passing by Montreal.”

The area was carved by glaciers, or, from my Hawaiian perspective, is being carved by glaciers. Ed thinks that the glaciers “were not kind to farmers, leaving a shallow coating of silty sand anywhere from 3 to 24 inches thick on top of solid bedrock.” But his Plainfield farm “has much deeper soils: a sandy loam improved by many years of manure spreading. Unfortunately, a lot of it is poorly drained because the glaciers had compacted gravel into an impenetrable layer of about 12 inches thickness, which is found anywhere from 18 to 28 inches beneath the surface. We have trucked many thousands of yards of Plainfield topsoil to Roxbury to make some excellent raised beds on the home farm.”

I don’t know if it was Ed who spread that manure up in Plainfield, but I’m pretty sure he was familiar with the art.

A Long, Strange Trip

Before Ed got into flower growing, he had been an associate professor at M.I.T. and a visiting lecturer at Harvard. “What did you teach in Cambridge?” I asked, placing the emphasis on the ‘you’, so to intimate that once he had responded I might relate the nature of my own professorships there.

“Filmmaking,” was his reply.

“How did you come to be in that field?” I asked.

“I did graduate work in philosophy—‘Theory of Knowledge’,” he began, “then I got interested in documentary film. I shot a film in Mississippi about the Civil Rights Movement and then a film in Haight-Ashbury and Mendocino County about hippies during the Summer of Love in 1967.”

“Haight Ashbury?” I repeated, wondering if the image of my own dilated pupils might not be in a dusty canister in his Vermont closet.

“I continued,” he continued, “to do documentaries,

some fairly straight, some experimental, until the early ‘80s.”

In fact, a Google search turns up adjectives like legendary to describe Ed’s filmmaking career. “Black Natchez”, “Panola”, “One Step Away”, “Harry’s Trip”, “Diaries, 1971-1976” and “Life and Other Anxieties” constitute his significant filmography. He authored “Guide to Filmmaking” and “A Filmmaker’s Handbook”, and, with Richard Leacock, founded M.I.T.’s documentary Filmmaking department. But then, having read Jim Lane’s “The Career and Influence of Ed Pincus: Shifts in Documentary Epistemology”, you already knew this. When, why and how, you want to know, did he come to his senses and start growing flowers?

Love in Bloom

Ed grew up in Brooklyn. Among his early memories, which include the announcement of the death of F.D.R. (upon the hearing of which Ed stopped playing his game of punch ball and began crying, certain, as he was, that the Nazis would now win the war and take young Ed prisoner) and the historic day he attended a game at Ebbetts Field as Jackie Robinson broke the color barrier, Ed also remembered the bare 300 square foot patch of yard in front of his apartment house. Nothing would grow there. That stuck in his mind: nothing at all. Years later he considered moving that soil to his farm as an experiment in weed control. But we’re getting ahead of ourselves. Why did he transition to flower farming? What was the catalyst?

Maybe it was the summer of 1969 that started it. He and Jane went to upstate New York. Wait a minute. Jane? Let’s go back to 1958. Ed was an undergraduate at Brown University. He went to Europe to bum around for the summer and discovered that he “felt much more at home than I did in the US. For those of you who never experienced the ‘50s in the United States, I could not begin to tell you the horror of it all. In any case, I couldn’t bear to return and enrolled, instead, at the University of Geneva. When I did return stateside, I had grown a beard - enough of a rarity in those days that strangers would yell epithets at me on the street suggesting a sexual orientation on my part that they decidedly thought perverse. I walked into the University coffee shop [back at Brown, now] and there I was smitten by

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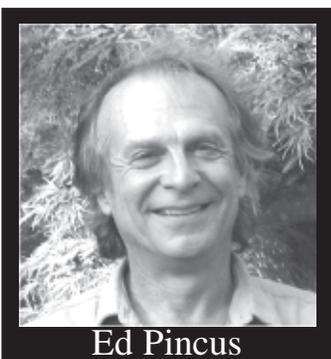
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Jane's rare beauty. Rare at that time at that university meant: not blonde, hair not in a bob, not wearing a white blouse with Peter Pan collar and no camel hair coat. She was reading Malraux's novel *La condition humaine* (*The Human Condition*). I said that I had read that little book, and the rest is history."

Jane was Jane Kates of White Plains, New York, a major in French Literature at Brown. She would go on to earn a Masters of Arts in Teaching at Harvard. Later she taught high school French to help pay the bills while Ed went to grad school. She was also "developing as an artist" says Ed. In fact, "she has worked in batik, collage and now paints in acrylic." Jane was one of the original authors of the women's health book "*Our Bodies, Ourselves*", now in its fifth edition, I believe. She wrote the pregnancy and childbirth chapters. She continues to work in the women's health movement, primarily with the Boston Women's Health Collective. She gave us all a scare when we were in Madison, and the report came that she had had a heart attack, causing Ed to rush back to Vermont. But Ed assures that she is doing fine now.

So, in the summer of 1969, Ed and Jane went to upstate New York, to rent a friend's home. They were in their early thirties. Ed recalls that, "it was the first time I had ever lived in a house. We planted what was called at that time a \$5 garden. I can still remember carrying a colander full of green beans into the kitchen, incredulous that they could actually be grown from the earth. This started my romance with growing."



Ed Pincus

Four years later the couple purchased a vacation home in Vermont. The house was a "rugged, two-seater outhouse" kind of place with "a generator for intermittent electricity and a hand pump in the kitchen. Circumstances conspired to lead us to make it our home. For a while I commuted to Boston, went off to shoot films and grew a summer vegetable garden. Later, I tried some small scale commercial growing - ginseng and organic garlic - with little luck."

"A man who lived in the adjacent valley came to visit us around 1987. He had made his fortune importing South American flowers to Miami, then making bouquets that were distributed to supermarkets nationwide. He said that the high price of the Dutch guilder had opened opportunities for American growers."

Back to the Land

And so it began. Almost immediately he planted a quarter acre of peonies, "along with about 25 flats of other perennials (Pacific Giant delphinium, columbine, daisy, asters - none of which I continued to grow). We started to get a reputation for high quality, very late season peonies and expanded to several acres by 1990. We had started to grow French tulips and found that the quality was world

class. We could compete and get very high prices and again we were late season. But we found we could not reliably grow tulips without fungicide. After having lost several crops to botrytis we gave up on pure organic growing. That also meant my son would never be interested in taking over the farm."

Ed and Jane have raised two children and have one grandchild. "Our son has an Aikido (martial arts) dojo an hour drive from the farm, and our daughter, who also lives an hour from the farm, teaches the Alexander Technique and is finishing a counseling degree at the University of Vermont."

("The Alexander Technique is a method that works to change (movement) habits in our everyday activities... It is not a series of treatments or exercises, but rather a reeducation of the mind and body... It can be applied to sitting, lying down, standing, walking, lifting, and other daily activities..." says the official Alexander Technique website.)

"With your children off in other pursuits, what do you do for labor?" I asked, assuming that the many small colleges in Vermont would supply him with plenty of bright, summer applicants.

Documentarian Ed responded with this excerpted bit of dialogue:

"Jeff is standing next to the fertilizer hopper with a bag of fertilizer:

Ed: Put a third of the bag in the hopper.

Jeff: What?

Ed: Put one third in the hopper. Leave two thirds in the bag.

Jeff: Huh?

Ed: Leave more in the bag than you put in the hopper.

Jeff: One third...is that like a quarter?

Ed: Yes, Jeff, very similar."

"To keep minimally competent labor busy between tulips and peonies," Ed adds, "we started to grow lilac (8 acres) and snowball viburnum (3 acres). As the price of Dutch-grown Asiatic and Oriental lilies plummeted during the summer months, we gave up replanting lilies and now harvest our old stock every other year as a premium stem. We kept adding small amounts of interesting items (convallaria, various allium, as well as *Allium siculum*, perennial sweet pea, large flowered clematis), and" gradually they gave up "on the more common or problematic (at least for us) perennials (astilbe, baptisia, monarda, campanula, echinops, eremurus, liatris, perovskia, veronica, thermopsis, phlox)."

"We still do grow a lot of monkshood and have expanded peonies to about 6 acres having added lots of high quality whites ('Bowl of Cream', 'Elsa Sass', 'Ann Cousins', 'Duchesse de Nemours' and getting rid of 'Charlie's White' and 'Shirley Temple'), corals ('Coral Sunset', and 'Coral Charm') and 'Red Charm'. As woody stems became more popular we expanded our plantings of them. So now we grow significant amounts of *Malus*, snowberry, winterberry, spirea, colored twig dogwoods, bittersweet, cranberry and blue viburnums, *Physocarpus* 'Diablo', pussy willow, various P.G. hydrangea cultivars ('Limelight' may be the best) and rose hips. I got very excited about some of the newer hosta varieties for cut foliage but I seem to be more excited about them than is the market."

"When are your last and first frosts?" I asked, shivering at the very thought.

"Frosts are not a big concern to us. Freezes are. Because we are on a hillside and because cold air moves downhill, we sometimes have a 14 degree difference between our high and low land. Frosts are not unusual as late as early June, and September 1st is usually the earliest. There are usually three mild frosts in September and a heavy frost around October 10th.

"We don't grow annuals and generally nothing we grow gets harmed until the thermometer goes below 20. The one exception is *Aconitum carmichaeli arendsi*, which blooms in early October. We lose about one crop in three."

So we know that at one time Ed was strictly organic. I asked him to describe his current farming practices. We maintain a "plentiful supply of wood chip mulch for weed control, cleanliness and water conservation. We only have enough water for new plantings. We are again trying landscape cloth. Our experiments with it in the early '90s didn't work."

"We grow no annuals and never plant seeds. We buy new tulip bulbs every year. We have planted our woody material bare root, in containers, as rooted cuttings, and as liners. We used to plant our liners in raised propagation beds four feet wide, one foot on-center for 18 months and then transplant in the fall, but we are now trying direct planting in the field with landscape cloth."

As far as fertilization, "our basic routine (unless soil tests show other needs) is to alternate organic fertilizer 5-3-4 one year with 10-17-17 the next. We try to get 500 pounds per acre in two separate applications."

And as for pest control: "other than aphids on snowball: no insect problems." As mentioned before, "we spray fungicide on tulips."



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New England and Beyond

“Where is your market?” I asked.

“We sell all across the country but our best markets are Boston, New York City, Florida and California. We sell to wholesalers and through brokers.”

“Tell us how you serve your market, how you transport your flowers.”

“There is almost no infrastructure for flower growers in Vermont. We are far from our markets. Before the Canadian dollar went to pot we shipped some to Montreal by truck (2 ½ hours). One customer complained that transportation costs were far less from Amsterdam to Montreal than from Vermont to Montreal.”

“We have one 14' reefer truck,” he continued, “and may buy another this season.”

“Have there been any additional burdens for you since 9/11?”

“It is very difficult to get certified as a known shipper on the airlines. They must make an on-farm visit. So far we are certified on only three airlines. One of them stopped taking freight at the local airport, an airport which was very handy for us during the slow season. Now we will have to do almost all of our air freighting out of Logan (Boston). Worries about airlines - bankruptcies, terrorist-inspired security measures, shut downs - make me think we may have to develop a trucking route through the Northeast.”

Ed has been a member of the ASCFG for about as long as I can remember, which you may interpret as a long, long time. Rumors as to the degradation of my memory are probably false, and I wish what's-her-name would desist in spreading them.

Ed said that the ASCFG “has provided a community of support and information,” and praises the

networking, whether by email, by phone or at conferences, as being particularly helpful. Among other things it has helped him to evaluate suppliers. The ASCFG has provided him with the ability to “see lots of farms and find out how others do it.”

Ed is returning the benefits he has received from the ASCFG by serving as our Northeast Regional Director. Thanks, Ed.

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'Pompon'	pompon, double	2-2.5"	24"
'Giant Ray'	rays, double	5-5.5"	24"
'Fan'	short petals, semi double	2-2.5"	24"
'Pommax'	semi-ball, double	3"	30"
'Duchesse'	peony, double	3.5-4"	28"
'Benary's Princess'	tubular petals, double	3.5-4"	28"
'Compliment'	short rays, double	4-5"	30"
'Standby'	tubular petals, double	3-4"	30"
'Gala'	pin pillow, double	3.5-4"	32"
'Matador'	tubular petals, double	4-4.3"	32"

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Postharvest

by Gay Smith, Pokon & Chrystal



Silverthiosulfate (STS) is a systemic pre-treatment introduced in 1980 to protect flowers against ethylene poisoning. Most people agree that STS works by blocking internal

Coming through the first quarter, 2003 promises to be a year full of new discoveries. For example, in March, I visited John Dole in Raleigh for an adventure-packed day, starting with breakfast at Biscuitville. When it comes to cuisine, John knows his stuff. This local joint serves warm biscuits filled with sausage, eggs or jelly, achingly reminiscent of those “special” weekend breakfasts that included Bisquick delights.

After breakfast, we visited ASCFG members Sarah and Michael Tuner in Durham to walk their farm, chat and pick up a few flowers needed for John’s postharvest tests. As we were leaving, Sarah asked me what colors I perceived to be important on this year’s flower palette, and what magazines were good for referencing trend developments. Although there are many good choices, two I recommend are SAF’s *Floral Marketing*, and *Green Profit*, from Ball Publishing. Both are fast reads, covering everything from trends to variety introductions.

Want another real-life laboratory in which to observe trends? Stroll through the housewares department at Target. Don’t forget the bedspread and tablecloth aisles. There it is in front of you: color trends for the next 12 to 18 months. Since flowers are used to spruce up home interiors, be on the lookout for flower types that “fit” the colors featured in home décor items. You have to be living in a cave not to notice everything retro continues to be very hot. Grab ideas anywhere.

What’s the big news in flower handling so far this year? Definitely the announcement of product registration for STS. No doubt, registration looks like the wave of the future for many pre-treatments and solutions used for wet-pack shipping and sales displays. Flower postharvest products that flew under the radar in years past are being scrutinized by the Environmental Protection Agency, which is demanding registration. As of January 29, 2003, Chrystal has registration approval for use of AVB in California, Florida, Minnesota, Oregon, Colorado and Washington State. The registration process is ongoing for several more states currently producing flowers.

When silverthiosulfate, or STS, was pulled off the U.S. market, growers were left empty-handed without a systematic silver solution to treat ethylene-sensitive flowers. Suppliers dealt with EPA restrictions in different ways. Floralife developed 1-MCP. Marketed as Ethylbloc®, it’s a gaseous treatment that provides protection against external ethylene sources. Rogard’s Silgard product contained less than the minimum 5ppm amount of silver allowed by EPA so they were allowed to continue selling, but have since started the registration process. Pokon & Chrystal decided to go forward and register its systemic STS formula, called Chrystal AVB. Finally, growers of ethylene-sensitive flowers have access to products that dramatically lengthen vase life.

ethylene receptor sites naturally produced as plants develop flowers and fruits. Ethylene gas is a colorless, odorless growth hormone commonly used in the produce world to ripen fruits and veggies to hasten maturation. As you can imagine, ethylene wreaks havoc with flowers. Deadly in minute amounts, its damage appears in various forms: petal shattering, distorted bloom opening, transparent or “leathery” looking petals, blueish flower discoloration (especially apparent on red blooms), bud abortion and blasting - everything involved with premature senescence. If fresh blooms look old and start falling apart you are most likely witnessing ethylene damage.

What flowers are sensitive to ethylene? Many spring bulb crops exhibit considerable sensitivity including anemones, freesia, Asiatic lilies, iris, daffs, glads and ranunculus. All delphinium species are sensitive as are bouvardia, stock, snaps lysimachia, aconitum, alstroemeria, gyp, dianthus species and most campanula species. More information on ethylene-sensitive flowers will be included in the next edition of the *Quarterly*.

This naturally-occurring growth hormone is produced by flowers, fruits and veggies as well as combustion engines and cigarette smoke. It’s important to maintain

continued on page 19

Back to Basics

by Tina M. Smith, Floriculture Program
University of Massachusetts Extension and
Leanne Pundt, Cooperative Extension System
University of Connecticut

Scouting and Decision Making

A regular monitoring program is the basis of integrated crop management (ICM) decision making, regardless of the control strategies used. By regular monitoring, a scout is able to gather current information on the identity and location of problems and to evaluate treatment effectiveness. The following are the basics for an effective greenhouse scouting program.

Tools. The list of essential monitoring tools include:

- Trained personnel
- Handlens with 10X power and/or optivisor (headset with magnifying glass)
- Yellow sticky cards, clothes pins, bamboo stakes
- Flagging tape or colored flags
- Record keeping system, ie. clipboard and pen or a notebook with pencil
- Individual maps of all greenhouses
- Support labs and on-site diagnostic kits for disease diagnosis
- Support labs and solubridge for soil tests
- Resource information such as pesticide labels, pictures and life cycles of key pests

Optional tools.

- Soil thermometer
- Field microscope (30X)
- Potato chunks (to monitor fungus gnat larvae)
- Waterproof magic marker to label sticky cards

Pre-Crop site evaluation. Prior to the introduction of a crop, evaluate the entire greenhouse, inside and out. Note the presence of weeds in and around the greenhouse, drainage problems, algae build-up, pet plants, stock plants and debris under benches. Crops growing in adjacent greenhouses, or outdoors should be recorded. Previous pest problems in the greenhouse and current pesticide application methods should be reviewed. A plan of action may then be developed to eliminate these problems prior to the arrival of the crop. Prevention of key pest problems may be more easily accomplished if the grower and scout take the time to identify, analyze and correct problems before crops are introduced. Also, consider how the variety of plants to be grown in the same area may influence ease of pesticide



applications and spread of disease. For example, keep seedling and cutting geraniums separate to help minimize spreading bacterial blight. Keep propagation houses separate from other growing areas, and vegetable transplants separate from ornamentals

to help reduce the incidence of impatiens necrotic spot virus when western flower thrips are present. Note that most pesticides labeled for ornamentals are not labeled for vegetable and herb plants.

Inspection of incoming plants. At the time of arrival or soon after, the scout should inspect one-third or more of the plants. Thoroughly examine the plants for signs of insects and diseases. (See attached chart.) Early detection and prompt action can minimize the spread of insects and diseases and save pesticide applications.

Using sticky cards. Sticky cards are used to detect infestations of adult flying insects. Yellow colored cards will attract fungus gnats, shore flies, whiteflies, thrips, leafminer flies and winged aphids. Blue colored traps are more attractive to thrips, although it is more difficult to see the thrips against the blue background. Attach each card to a wire or wood stake using a clothespin. Using two clothespins glued back-to-back will allow you to move the card upwards as the plant matures. Attach one end of the clothespin to a stake and clip the card to the other clothespin.

Each yellow sticky card should be numbered and placed in the greenhouse at the minimum rate of one card per 1,000 sq.ft.. Space the cards equally throughout the entire range in a grid pattern. Place cards near all entryways and vents. Small greenhouses (<4,000 sq.ft.) can be scouted as one unit. Larger greenhouses should be divided into 2,000 to 3,000 sq.ft. sections for ease of scouting.

Change the cards weekly, and place new cards in the same areas of the greenhouse to track pest trends. Brief, concise and accurate information is one of the best tools available to make a pest management decision. Identify and record pest numbers in a notebook or clipboard. Over time, population trends will emerge and provide direction for your pest management program.

Scouting and Monitoring. Scouting and monitoring should be performed weekly or, preferable, twice weekly during the entire production season. Scouting procedures should be performed as routinely as any other crop management task. Maps should be made of the greenhouse

and scouting should follow the same pattern every time. Scouting must be intensive; the more plants monitored the better. Scouting should always start at the major doorway, which is usually an entry point of pests. Special attention should be paid to plants around any openings in the greenhouse.

Scouts should walk every aisle and move from bench to bench in a snake-like manner. At least 10 minutes should be spent inspecting 20 or more plants for every 1,000 square feet of production area. Three or more randomly chosen plants on every bench should be inspected. Inspection starts at the bottom of the plant by checking the soil for insect, mite or disease pests and proceeds upwards, looking at older leaves, young leaves and new growth. Pots should be tipped sideways for inspection of the underside of the leaves. Hanging pots and baskets should also be inspected. The first plant showing symptoms on a bench becomes an indicator plant. This plant is tagged to allow the scout to easily recognize it from a distance.

Indicator plants. Indicator plants can be used in three ways: 1) to examine the pest's development cycle, 2) to monitor the effectiveness of a treatment, and 3) to detect the early presence of Impatiens Necrotic Spot Virus (INSV) and thrips on petunias or fava beans. Indicator plants should be marked and numbered with a colored flag or flagging tape so the scout can identify them quickly each week.

Making pest management decisions. Each week, the grower and scout should review the scouting information. Pest numbers recorded from sticky card counts and foliar inspections, the use of indicator plants, and located reservoirs of pests and diseases will help to prioritize a pest management strategy. Once this information is analyzed, a decision must be made that will include; the choice of pesticide or biological control, the rate, method and site of application; and any other management techniques that may

help solve the problem. Every pest management action should be recorded. Monitoring is an ongoing part of the management strategy.

Early detection will result in better pest management than a pest population that is "out of control". If problems are detected early, better pesticide coverage may be achieved due to a smaller canopy, and problem areas can be identified and treated reducing the need for blanket pesticide applications. In addition, "green pesticides" and biological controls may be more successfully incorporated into the pest management program. Over time, growers will determine their individual threshold for a given pest. One grower may accept 10-15 thrips per sticky card per week, while another grower with a history of Impatiens Necrotic Spot Virus will not accept 5 thrips per card per week.

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Back to Basics *continued*

Another important aspect of integrated crop management is crop culture. Crop culture involves plant nutrition, crop scheduling, height management, watering practices, temperature and light management.

At the end of each season, the grower and scout should examine their records to identify trends in pest populations and to review their management strategies. The weekly scouting reports and action taken is the basis for decisions about current and future pest management strategies and for judging the efficacy and cost of any management action.

Resources for Greenhouse Pest Management

- 2003-2004 New England Greenhouse Floriculture Guide, \$20 available from UMass Cranberry Station, PO Box 569, E. Wareham, MA 02538.
- New England Integrated Pest Management Scouting Guide for Poinsettias, \$10 available from: Univ. of Conn., Office of Communication and Information Technology, U-35, 1376 Storrs Rd, Storrs, CT 06269-4035.
- Integrated Pest Management for Bedding Plants, A Scouting and Pest Management Guide, IPM No. 407, available from: Cornell University, NY State Ag. Exp. Station, Geneva, NY, 14456

PEST MONITORING CHART

KEY PEST	MONITORING GUIDELINES	WHERE TO LOOK/COMMENTS
Melon Aphid (<i>Aphis gossypii</i>)	Rely on plant inspection, not sticky cards. Scout weekly, beginning early in the cropping cycle. Aphids are 1/16 inch long with dark cornicles. Melon aphids are less likely to form winged adults than green peach aphids.	Inspect incoming plant material, on underside of leaves and stems. Most likely found along the plant stem then on the growing tip.
Green Peach Aphid (<i>Myzus persicae</i>)	Monitor weekly. Rely on plant inspection, not sticky cards. Winged adults are found on cards when aphid colonies on weeds and crops become overcrowded.	Look on tips of new growth for 1/14 inch long green to pinkish aphids. Look for signs of aphid activity: shed white skins, honeydew, and presence of ants. Inspect and remove weeds.
Western Flower Thrips (<i>Frankliniella occidentalis</i>)	Rely on sticky cards for population trends and to evaluate treatments. Use cards at floor level to detect overwintering thrips in Feb. Place cards at bench level, just above crop canopy in March before damage is observed.	Inspect incoming plant material for adults and larvae by tapping tender new growth and flowers over a white sheet of paper. Keep plants isolated for 4-5 days to detect thrips emerging from eggs and pupae. Inspect and control weeds, particularly white clover flowers outside greenhouses.
Whiteflies (<i>Bemisia tabaci</i> , <i>Trialeurodes vaporariorum</i>)	Rely on plant inspection to detect immature stages, esp. on cuttings and young plants. Use indicator plants to assess treatment effectiveness esp. if using insect growth regulators. Use sticky cards to monitor adults.	Older (3rd and 4th) instar immatures are found on lowermost leaves, egg laying adults on the uppermost leaves. Inspect and remove weeds and "pet plants".
Fungus Gnats (<i>Bradysia sp.</i>) Shore flies (<i>Scatella stagnalis</i>)	Use yellow sticky cards to monitor for adults. Place some cards flat on rim of pot and others, horizontally just above soil surface to capture adults. Use potato chunks (peeled side inserted in soil) to monitor larvae. Examine daily.	Favorable habitats include areas with standing pools of water, mud floors and weeds. Potting mixes high in organic matter tend to attract fungus gnat activity. Adult shore flies spread pathogens and thrive in the same wet conditions that are attractive to fungus gnats.
Two spotted mites (<i>Tetranychus bimaculatas</i>)	Rely on plant inspection. Look for light stippling, discolored foliage, and webbing if high populations have developed.	Inspect incoming plants for mites, esp. on undersides of leaves by tapping leaves over a white sheet of paper. Monitor closely near hot, dry areas in greenhouse (ie. near steam pipes)

PEST MONITORING CHART

KEY PEST	MONITORING GUIDELINES	WHERE TO LOOK/COMMENTS
Pythium root and stem rots (<i>Pythium sp.</i>)	Visually examine roots for cortex that “sloughs off” leaving central core. Healthy roots are generally white and firm; decayed roots may be water-soaked and/or darkened in appearance. Stem cankers are brown to black.	Monitor incoming plants and plants that may have been stressed by high salt levels, wounding, and transplant shock especially if fungus gnats or shore flies are present.
Rhizoctonia root rot, stem canker and web blight (<i>Rhizoctonia solani</i>)	Monitor seed flats of slow growing plants for post emergence damping off. Look for cobwebby growth encouraged by high humidity and wet foliage.	Unlike pythium, drier soil is more favorable for disease development and therefore it is found in the upper portion of the soil.
Botrytis Blight (<i>Botrytis cineraria</i>)	Monitor closely during favorable conditions, ie. cool temperatures, free moisture and presence of fuzzy gray to brown fungal spores. Flowers may fade early and then mat together.	Plants may be attacked at any stage but new tender growth, freshly injured tissues and senescing or dead tissues are preferred. Look for tan to brown dead areas, and gray fungal growth. Monitor areas with poor air circulation, and crowded plants.
Powdery Mildew (<i>Erysiphe sp. Oidium sp.</i>)	Look for white powdery growth esp. on upper leaf surface of roses, begonias, viola, phlox, chrysanthemums. On poinsettias, look for white or yellow spots on upper leaf surface.	Monitor closely in areas with poor air circulation, high humidity, or drafty places with more temperature fluctuations between day and night temperatures.
Bacterial Blight (<i>Xanthomonas pelargonii</i>)	Inspect geraniums more closely during warm weather. Look for isolated leaf wilting, V or wedge shaped yellowing between veins, and 1/8 round, brown spots. Look for vascular discoloration. Plants may wilt and die.	All geraniums are susceptible. Do not place ivy geraniums over geraniums. When infected, ivies often do not show any distinct symptoms, perhaps only loss of vigor, and will serve as inoculum source. Monitor areas closely with geraniums from different suppliers.

Postharvest - continued from page 15

good sanitation because fungi (including botrytis) and bacteria give off ethylene as they develop. Ethylene sensitivity is reduced at temperatures lower than 40F.

Two methods of ethylene defense are gassing blooms with Floralife’s Ethylbloc®, or systemically treating flowers with Chrysal’s STS formula, AVB. There are pros and cons for both systems. Systemic treatment provides excellent control, but spent solutions must be neutralized and properly disposed of since silver is a heavy metal and not allowed to be dumped in the sewer. Ethylbloc® has a fairly short residual effect (4-5 days on average) and requires a closed area for proper treatment.

STS is not inexpensive, so it is important to use it correctly and reuse it until the solution is spent, usually 3-5

days depending on volume processed. It has lost its effectiveness when it turns grayish black. Always mix solutions in opaque buckets because silver is sensitive to light and high temperatures. Cover and store in the cooler when not in use and skim green trash from the solution between uses to keep bacteria in check. Keep in mind that flowers drink from the bottom, so it is necessary to fill buckets only as much as it takes to submerge stems 3-4 inches deep. Usual treatment time is 2-4 hours depending on weather and temperature. STS is best as a “first drink” treatment. After that process is complete, transfer flowers into a low-dose flower food until packed or sold.

Regardless of which product you choose to protect your ethylene-sensitive crops, let customers know what you do to provide top quality flowers. Flowers treated against ethylene damage are worth more money than untreated stems, but don’t take my word for it, ask any wholesaler.

Lemons and Lemonade

by Janet Foss, J. Foss Garden Flowers



Weeds for Sale?

The difference between growing unusual cut flowers and introducing weeds to our farms can be a very fine line. Specialty cut flower growers often try to provide cut materials that are not always available for the cut flower market. We often offer material regarded as weeds to the rest of agriculture. Plants such as pennycress, Queen Anne's lace, centaurea, linaria, thistle, amaranth and other plant material can be found on noxious weed list of various states. Some crops have become major weeds on our farm. Pennycress, Sweet Annie and *Linaria purpurea* have self seeded enough to cause me some alarm.

I am not good at pest control, so I need to take a more offensive approach by not introducing plants that are going to become weeds in the first place, and by selecting plants so that I don't add more weeds to an already overwhelming problem. It is hard to know what new plant material will create a weed problem and what won't and since I really like to try new things, I often put my farm at risk for new invasions of weeds.

We grow *Cirsium japonica*, Japanese thistle, which has been most openly criticized by others in agriculture. I can understand their concern, considering how many of the noxious weeds in Washington are thistles, so I have watched it, and other thistles closely to see if cross pollination is occurring. So far, there have been no problems, at least in the area of becoming a pest. *Cirsium japonica* has some great attributes: it has fewer thorns and comes in nice

colors like soft pink, rose, white, and even the common lavender. It makes a nice filler flower, it comes in sprays with buds that open, and it lasts well cut. It has nice long stems, and blooms for a long time. It can be grown in cool greenhouses for winter production. It is propagated from seed, does not have underground runners that spread all over the garden, and has never self-sown for us and is easy to till in and get rid of once its production has ceased.

Because it is a thistle and all sorts of biological agents have been released to control thistles, I find that it is very difficult to grow to a marketable state. We have a black aphid that is selective to thistles, every kind of thistle we have, and *Cirsium japonica* is not excluded. If aphids are not enough to make the flowers unmarketable, the flowers are often deformed because of biological agents - seed head weevils - that have been released to control noxious thistles. Years of experience have shown this thistle would never get out of control, but other plants I have planted have.

Linaria purpurea is not on the weed list, but other beautiful perennial linarias are. Perennial linaria is resistant to many herbicides, self seeds easily, and seeds seem to sit in the ground for years and continue to germinate over time. I haven't grown *Linaria* for a few years, but it still in existence on my farm. After walking around the farm a couple of weeks ago my husband reported back that at least the linaria looked good! Those were supposed to be rows of *Dianthus* 'Purple Bouquet'. The seeds of linaria are heavy and generally fall near to the

ground where they grew, but occasionally the tractor or tillage equipment will carry seedpods to a new area. *Linaria* growing in annual production areas has never been a problem, only the perennial areas get over taken by seedlings, and tillage is pretty effective in controlling it. The plants establish themselves in rows between other plants where the tiller can't reach, this makes it look like it was planned and that rows of *Linaria* were planted. Since it is a pretty good seller for us, I harvest and sell stems from the self-sown plants. We've sold it for so many years some of the florists who use our flowers really love it and look forward to it. It does have a good vase life; at last two weeks cut and is a nice wedding flower.

Another flower I planted and was sorry I did is *Malva sylvestris*. The photos were wonderful, but the plant never lived up to my expectations and I never appreciated it as a cut flower. It self sowed around, even though I thought I removed it before it set seed, and it has very deep roots that make it hard to pull. Even after it's been tilled up it seems to be able to survive and grow. Five years later I still find it around where I least expect it. It doesn't mind growing in poor soil, such as road right-of-ways and tractor paths. Of the all pests I've planted I consider this one to be the worst.

These and other plants need careful consideration before planting. Keep in mind pest control or possible weed infestations that may occur on your farm and how they might affect your farm in the future. A plant that becomes a weed is definitely a lemon.

Research Update

by Megan Weddington
North Carolina State University
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GOLDENROD

An Underappreciated Flower

Solidago, commonly called goldenrod, is a low-maintenance herbaceous perennial currently used in the United States as a landscape plant. Though *solidago* cut stems are a popular filler flower in Europe, they are just gaining popularity in the States. Most species tolerate heat, drought, and cold (hardy from Zones 2-9). This member of the Asteraceae usually grows unbranched and produces yellow flowers; however, one species, silverrod, has cream to white flowers.

Goldenrod grown from seed may flower the first year, but flowering usually occurs the second year. Seed germination requirements are species specific. Vegetative propagation is required for cultivars, including *solidaster*. Stem tip cuttings should be taken in late spring to early summer. Rhizomateous species can be divided every 2 to 3 years in the spring or fall, yielding up to 40 divisions per plant.

Field-grown goldenrod should be spaced at 1 x 1 ft. and will require netting for stem support. Once established, most goldenrod are highly drought tolerant, but supplemental irrigation may be required during dry periods for optimal growth. Plants will bloom in late summer and fall and should be cut back to the ground in late fall or early spring. Replanting every 2 to 3 years produces the highest quality plants.

Stems should be harvested when half of the florets are open and they may be stored at 36 to 41F for up to 5 days. Vase life, normally 5 to 10 days, can be extended with silver thiosulphate (STS) or benzyladenine (BA) treatment. Goldenrod can also be used as a dried cut flower.

Disease concerns include susceptibility to powdery mildew, rust, downy mildew and various leaf spots. Field plantings should not be located near pines, as they are an alternate host to rusts. Insect pests include moth and butterfly larvae that may feed on the foliage.



Though it is commonly believed that goldenrod is a major allergen, the pollen is actually too large and sticky to be carried far in the wind and it is insect, not

wind, pollinated. Also, some species have been observed to be invasive; however, the cut flower industry in particular has benefitted from breeding efforts to develop noninvasive, tall, disease-resistant cultivars.

Burrows, Rhoda L. 2002. Goldenrod: Plants with multipurpose potential. HortTechnology. October-December. Vol. 12(4), pp. 711-715.

ORGANIC PEST MANAGEMENT

Environmental concerns have prompted many farmers to move from a conventional farming system to an organic farming system. Organic systems utilize cultural and biological inputs for crop nutrition and pest management. A transition period may see diminished yields, but organic systems ultimately produce yields near or equal to those obtained using conventional fertilizers and chemicals.

Soil management is an important factor in pest management. Use of cover crops and composts improves biological, chemical, and physical soil properties, including organic carbon content, cation exchange capacity, aggregate stability, reduced levels of soil nematodes and other pathogens, and improved plant tolerance to nematodes. Feather meal, fish emulsion and seaweed extract are common organic fertilizers. Gypsum, lime, or potassium magnesium sulfate can be used to correct deficiencies or imbalances, raise soil pH, or improve soil water infiltration.

Prevention becomes the primary approach to insect control. Monitoring for insects and properly identifying immature life stages are the first line of defense in an integrated pest management system that will prevent economic crop damage. While insects may develop resistance to chemical controls, agents such as insecticidal soaps and oils prevent resistance by acting in an external physical nature. Some cultural practices used to improve soil quality may simultaneously suppress various pests. These practices include crop rotation, solarization, cover crops, and mulches.

When converting from conventional to organic, a transition period is required. Some recommended practices to ease the transition include using pest-resistant leguminous crops in field rotation to supply nitrogen and reduce existing pest populations, routine applications of green manures to increase soil organic matter and reduce soil erosion, and adoption of practices on a small scale to ensure economic feasibility. General soil and pest management strategies must be fine-tuned to meet specific farm characteristics such as geography, soil condition, climate, and farm size.

Zinati, Gladis M. 2002. *Transition from Conventional to Organic Farming Systems: I. Challenges, Recommendations, and Guidelines for Pest Management. HortTechnology. October-December. Vol. 12(4), pp. 606-609.*

THE ROLE OF XYLEM IN CUT FLOWER REHYDRATION

One of the primary reasons for poor cut flower performance during vase life is insufficient water uptake due to blockage in the xylem. This blockage may be caused by microbial growth, gums or saps produced by the plant, or the presence of an air bubble, or air emboli, in the xylem. When the stem is cut, air enters the vessels that are subsequently sliced open. It has been suggested that this air bubble must be sufficiently removed before water uptake can be established in the vase. Previous research on trees has demonstrated that a combination of physical and plant anatomical factors affect the removal of air from xylem vessels. Researchers in The Netherlands used chrysanthemum stems to determine if similar factors play a role in cut flowers.

Results indicated that within a few hours after placement in water only part of the cut (and thus embolised) vessels were completely refilled with water. This means that hydraulic conductance was only partly repaired. The model they proposed assumes that a fast reconnection will occur between vase water and non-cut xylem vessels due to a redistribution of air and water. This process will be followed by a relatively slow dissolution of trapped air that will be diffused to the surrounding water. Cross-sections of the stem were examined at different heights from the cut. At the cut surface, almost no air-filled vessels were observed indicating that they had been refilled with water from the vase solution. Higher in the stem, a large percentage of vessels that had been cut were found to contain air; these were all large-diameter vessels. All the small-diameter vessels at this height had recovered water uptake ability.

Vase water height was also found to have a positive effect on cut flower rehydration. A higher water height may have increased the air pressure inside the xylem vessels, subsequently increasing the dissolution of the obstructing air. Generally, there is a gradual basipetal increase in xylem vessel diameter in plants, explaining the interaction between height of vase water and cutting height. Higher cut stems, with presumably smaller-diameter vessels, responded less to height differences in vase water because less air pressure in the air-filled vessels was present as a result of vase water height.

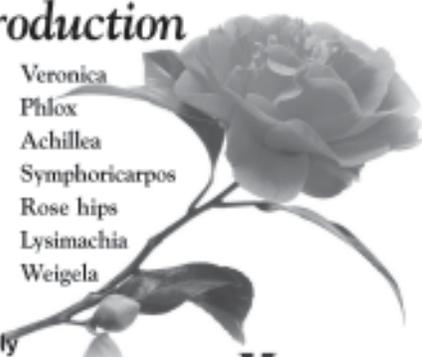
Essentially, the anatomical differences in xylem structure, specifically vessel diameter, play an important role in rehydration of cut flowers. Since vascular tissues are continually developed as the plant grows and adapts in its preharvest environment, it may be expected that variations in growth conditions will result in differences in rehydration abilities.

Van Ieperen, W., U. Van Meeteren, J. Nijssen. 2002. *Embolism repair in cut flower stems: a physical approach. Postharvest Biology and Technology. Vol. 25, pp. 1-14.*

Perennial and Woody Plants for Commercial Cut Flower Production

- Peony
- Hypericum
- Aconitum
- Gentiana
- Solidago
- Ilex
- Viburnum

- Veronica
- Phlox
- Achillea
- Symphoricarpos
- Rose hips
- Lysimachia
- Weigela



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Integrated Pest Management

by Stanton Gill
University of Maryland



Most of the aphids you as a cut flower grower must deal with attack the plant on above-ground parts. There are aphids that attack root systems but they are generally not a problem for cut flower growers. Some aphid species that feed on above-ground plant parts are easy to control, while others are really tough with populations bouncing back rapidly after insecticide applications.

Aphids found in cut flower fields in the northern United States generally have male and females present in late summer to early fall. The females of most species mate with males, then oviposit the eggs which overwinter on woody plants or weeds. In the spring, winged forms (called alates) are produced. These winged forms are generally females that will start new colonies on plants in the spring. They are sitting there under the snow just waiting for the spring to arrive.

Under greenhouse conditions, these same species generally do not produce males and do not overwinter as eggs. These aphids reproduce parthenogenetically, that is, all insects present are females, and each female gives birth to more females without the need to mate with males. Aphid females give birth to living nymphs rather than lay eggs.

The predatory aphid midge, *Aphidoletes aphidimyza*, is

excellent for control of over 60 aphid species but is especially effective in controlling green peach aphid. These midges are shipped as pupae. The emerging adults mate, find aphids in the greenhouse and lay eggs near the hosts. One to two pupae are placed on each potted plant. If you are controlling aphids on bedding plants use the rate of 3–5 larvae per square yard of bench area. This release is continued on a biweekly basis until the aphids are controlled. The maggot-like larvae of the midge will feed on the aphids. Each midge larva will consume 15–20 aphids in its lifetime. The predaceous larvae are yellow-orange and have two protruding anal spiracles on the tip of the abdomen. This predator apparently thrives under humid conditions.

Before you attempt to use biological control for aphids in a greenhouse investigate the economics, shipping routes, availability, suitable species, release rates and timing. It greatly helps you to know which species of aphid you are trying to control since some predators and parasites are better for certain aphid species.

If you are trying to control melon aphids, *Aphidoletes colemani*, is the preferred species to use. Try 1–3 aphid midge cocoons per sq. ft. of growing area. In Northern greenhouses, during the shorter days of fall and winter, this predator requires supplemental lighting to stay active.

Aphidius matricariae is a parasitic wasp that can be used to control the potato aphid and green peach aphid. *Aphidius colemani* works the best on melon aphid populations. These parasitic wasps reproduce by laying eggs in aphids. The immature wasp feeds inside the host and kills it, causing the aphid to become slightly puffy or mummified. This wasp typically produces tan or gold aphid mummies. A round hole can be observed where the adult parasite chewed its way out of the aphid mummy.

Sometimes *Aphidius* and *Aphidoletes* are used together. These predators and parasites can be ordered from biological supply companies. These must be released at early signs of aphids and can work very effectively in keeping aphid populations from building up to damaging levels.

Another method is the use of pathogens infectious to aphids. Usually growers think of disease as undesirable organisms that damage plants. There are pathogens that kill insects (entomopathogenic) but do not harm the plants in the greenhouse. One of the most effective entomopathogenic fungi for

aphid control on the market presently is *Beauveria bassiana*. This insect pathogenic fungus is sold under two brand names, BotaniGard (sold by Whitmire Company) and Naturalis T&O, sold by Troy Bioscience. Conidia of



the fungus are mixed with water and applied as a fine spray. Making direct contact with the aphids is important. Use a fine mist sprayer with droplet sizes of 100 microns and under to insure the best contact with the aphids. The conidia that make contact with the aphid will germinate and use a germ tube to

penetrate the body of the aphid and cause death of the pest. In the spring and summer aphids are shedding their skins every 3–4 days. When the aphid sheds its skin it may reduce the efficacy of the fungus. Repeated applications at 3–5 day intervals usually insures that conidia are present on the skin long enough to cause infection of the aphid. Some growers use *Beauveria bassiana* applications in combination with one or more chemical controls. Check the complete label for a list of compatible pesticides that can be safely used with *Beauveria bassiana*.

In Europe, greenhouse managers have been using an entomopathogenic fungi, *Verticillium lecanii*, with excellent success in controlling aphids in greenhouses. One of the large biological control supply companies is in the process of labeling the material with the United States EPA.

New in Chemicals for Aphid Control?

Microbial insecticides: The entomopathogenic fungus, *Beauveria bassiana*, sold under the name BotaniGard (Whitmire Company) or Naturalis-0 (Troy BioScience Company), applied as a fine mist directly to the aphids will control some aphid species. Repeated applications at 3-5 day intervals will probably be necessary.

Botanical insecticides: Products containing neem extracts such as Azatin XL (Olympic Chemical Company), Ornazin

(SePro Company), and Aza-Direct (Gowan Company) work best if applied to early developing colonies of aphids. The insecticide acts mainly as an insect growth regulator.

Systemic insecticides: Imidacloprid found in Marathon 1-G, Marathon 60 WSP, and Marathon II (Olympic Chemical Company). The 1-G and 60 WSP applied as a soil drench will give long-term control of 8-12 weeks. The Marathon II is labeled for use as a foliar spray and gives control for approx. 14 days. Pinpoint 15 G (Valent Company), which contains Acephate (Orthene), works well on aphids but has a limited label and phytotoxicity may be a problem. Syngenta Company has plans for the systemic Flagship to be labeled for aphid control in greenhouse sometime in 2003 or 2004.

Insect growth regulators: Insect growth regulators (IGRs) work best if applied to young colonies of aphids. This means applying the material when aphid populations are first detected. Distance (Syngenta Company) give very good, long-term control of aphids. Precision and Preclude IGRs also give good control of young aphid populations.

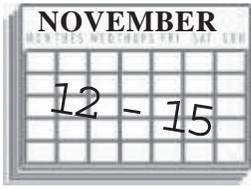
Novel modes of action: Endeavor (Syngenta Company) has a novel mode of action in killing aphids. The chemicals blocks the stylet of the feeding aphid which basically starves the aphid to death

Old standbys: Thiodan 50 WP (chlorinated hydrocarbon) has been around awhile but is still effective on aphids. DuraGuard (Organophosphate) is good on tougher to control aphids such as melon aphid.

Stay alert, watch for early building populations of aphids and take action swiftly once a population is detected.

It's not too early . . .

. . . to make your reservations for the



Vancouver Conference.

Call the Fairmont Hotel Vancouver at (604) 684-3131. Be sure to tell them you're with the Association of Specialty Cut Flower Growers so that your rooms will be credited to our block. Our conference rate is extended for two days before and after the meeting, for those with extended stays.



We'll tell you a little bit about how we grew this new crop, but first a word of warning. Poinsettias are a whole 'nuther ball of wax compared to specialty cuts, and they'll give you gray hairs and ulcers in short order. During poinsettia season, Frank cracks the greenhouse door open every morning and peers in, ready for the latest disaster. If you are a new or inexperienced grower, or if you don't have a good greenhouse set up, you'll want to move slowly on this one. You WILL make mistakes, so make them small!

Production Pointers

There are mountains of information available about growing poinsettias, and we could fill 10 issues of the *Quarterly* if we tried to, so first of all, do some homework. Start with the website for Paul Ecke Ranch at www.ecke.com. They are the premier poinsettia breeders, and the creators of the 'Renaissance' poinsettia. They have a technical help page, and you can get a free CD rom from them with lots of cultural information. You will also want to get from them (or other ag book suppliers) a copy of *The Poinsettia Manual*, a hefty reference for poinsettia growing. And you will want to look at the book *Floriculture*, by John Dole and Harold Wilkins. John is one of the leaders in poinsettia culture and new varieties. The *Ball RedBook* is also an excellent reference that we used a lot. And very importantly, check with your state extension service. Potted poinsettias are a very important crop (even if you do go broke growing them!) and most states will have extensive reference materials and grower support. This is important, because it is very different growing a

poinsettia in upstate New York compared to Texas.

After you get the basic information, we can give you a few pointers about how we raise poinsettias. First of all, poinsettias are short-day plants. They won't set buds until after September 21. They are classified by how many weeks it takes after setting bud for the plant to develop to a saleable stage. For example, some of the earlier varieties are called "7-week" or "8-week" varieties because they can be ready for sale in mid-to-late November under natural light. And no, it is not necessary to shade poinsettias with black cloth to make them bloom in time. In fact, some of the new varieties bloom too early! The 'Winter Rose' types are "9.5-week" varieties, so technically they are late, but last year we were harvesting the first stems soon after Thanksgiving. By December 5, we were in full bloom.

A key component to making poinsettias bloom on time is night temperatures after you hit the short days. We usually get our first cool front of the year around the 23rd of September, so at that point we let the night temperatures in the greenhouse drop to about 55 degrees and try to maintain that temperature for about 10 days to 2 weeks. After that, we raise the temperature up to 60-65 degrees at night, depending on the variety. Don't keep the nights cool for too long or the crop will be delayed.

You will receive cuttings rooted in strips of Oasis foam. They are usually packed 100 or 200 cuttings to a case. Unpack the boxes as soon as they arrive and plant them as soon as you can. How you treat the new cuttings is critical for the success of the crop. We lay the strips of cuttings out on the bench in moderate shade and make sure that they are sprayed or misted often, both before and after they are planted. They are very delicate, and even after planting, they need to be shaded, and misted or sprayed until they are established. Sometimes that takes up to 2 weeks. We use 30%

shade on the greenhouse, and then we hang sheets of white row cover inside the greenhouse to give even more shade. As they get established, we remove the shade incrementally.

For potted poinsettias, our cuttings arrive around the end of August, but we are planting our cut poinsettias a lot earlier. This year, we plan to have our cuttings shipped around June 16th. This makes for a long season crop, but it is necessary to give us enough time to pinch the crop and still get enough stem length before fall. We had some cuttings shipped to us last year around August 1st. This was too late to get a long enough stem on a pinched crop, but the unpinched (straight-up) plants were spectacular.

Pots No Longer Needed

The biggest revelation that we had about growing cut poinsettias is that you don't have to grow them in pots! This is a bigger deal than you may realize - like riding a bike for the first time. We have tried these cuts in pots before, both last season and 3 years ago. They were OK, but not really cost effective. When we planted them in ground beds, however, the cost went way down, and the quality soared. We are convinced that by learning to grow these cut poinsettias in ground beds, we have made them a viable crop.

We have some 20-foot wide, heated cold frames with double-layer plastic that we can detach and fold back in the summer. We put 30% shade cloth over the frames. Each greenhouse has four 4-foot wide ground beds. This is where we grew our poinsettias. You could also use a standard greenhouse provided you had an adequate cooling system in the summer.

We started by solarizing the soil. Before we removed the double poly on the greenhouse, we tilled the beds, watered them in well, and covered the beds with a sheet of plastic. Then we shut up the greenhouse for 3 weeks and let it bake! This killed all the weed seeds, and presumably a lot of disease

organisms. Other growers may choose to use steam sterilization or methyl bromide, but whatever the method, you need to start with clean soil.

After that we amended the beds with turkey-litter compost and a top dressing of organic fertilizer. We don't try to grow our poinsettias organically, but this fertilizer regime works for us with other crops. We used about 2/3 of a yard of compost per 80 foot long bed, and about 10 pounds of 6-2-2 fertilizer. That may seem like a lot, but poinsettias are heavy feeders. They like a lot of nitrogen, and we also regularly fertilize later in the crop cycle with 250 ppm nitrogen using Peter's 20-10-20 peat-lite fertilizer, injected by a Dosmatic. We also use supplemental magnesium in the form of epsom salts. Magnesium is very important in developing the very dark green leaves that make these cut poinsettias so attractive. We use 2.5 oz. of epsom salts per gallon of fertilizer concentrate, injected at a 1:100 ratio. Molybdenum is also an important micronutrient, and although it's probably not necessary when growing in natural soils, we add sodium molybdate to the concentrate a couple of times. Little packets of sodium molybdate are available from greenhouse suppliers, and the references mentioned earlier will give you a lot of advice about molybdenum and many other fertility questions. Molybdenum is a heavy metal, so handle with care.

Calcium nutrition is also very important in poinsettias. We have a calcareous soil and high calcium in our water, so we don't have a problem; but you should talk to your state ag guys and consult your manuals in your own situation.

The new cuttings are planted directly in the ground beds at a spacing of 4 rows per bed, 1 foot between the rows (2 plants per sq. ft.). The plants are placed 6 inches apart down the row. This is a critical time for the cuttings because they can dry out easily. We drape white row cover from the greenhouse frame for additional shade, but if you live somewhere less harsh than Texas, you might get away with less shade, or even with planting them under plastic from the start. We have to use shade to lower the summer temperatures. We water the cuttings in with a 9-45-15 transplant fertilizer.

began heating. After the first 10 days of cool nights, we bumped the temperature up to 65 at night. This is where you will run into the major cost of this crop. Because it is a 9.5-week variety, we wanted to keep it warm to push the crop. We actually kept our daytime temperatures warmer than usual (around 80-85 degrees) in an effort to push them.

Poinsettias are ethylene sensitive while growing, and can be affected by poorly burning heaters. We like to grow a few tomato seedlings in the greenhouse with the poinsettias. If you have an ethylene problem, the

The biggest revelation that we had about growing cut poinsettias is that you don't have to grow them in pots! When we planted them in ground beds, the cost went way down, and the quality soared. We are convinced that by learning to grow these cut poinsettias in ground beds, we have made them a viable crop.

In a few weeks the plants will be ready to pinch. They should have about an inch of fresh green growth at the top, and should be well rooted when tugged on. You'll want to give them a hard pinch, down to the firm stem below the soft new growth. Be sure to leave at least 3 or 4 good nodes. At this point your plants should be well established and actively growing. Keep them well watered and fertilized. The Renaissance series doesn't send up a lot of stems when pinched, so you don't want to stunt them at this point.

We grew our plants all summer under 30% shade, and when the first cold front hit, we rolled the double poly back over the greenhouse and

tomatoes will show it first with a condition called epinasty. The leaves will curl up and the plant will stretch. At the first sign of this, check for heater problems before the poinsettias are damaged.

We ran 2 rows of T-tape in the beds for irrigation. You need to keep the beds evenly moist, but not soaking. If they dry out too much, the plants will start to lose their lower leaves. This is more of a problem if you grow the 'Renaissance' in pots. The problem is not the loss of leaves (you remove them anyway), but the secondary growth of botrytis on the dead leaves on the ground. This can ruin your crop.

continued on page 37



Regional Reports

Region One

Northeast

Connecticut, Massachusetts, Maine, New Hampshire, New York, Rhode Island, Vermont, Maritime Provinces, Ontario, Quebec

Ed Pincus (2004)

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Plant hardiness is a complicated matter that goes well beyond USDA Zone information. Our farm is probably in the warmer part of Zone 3 with 10-year minimum temperatures ranging from -25° on our higher ground to -35° on our low elevations. Extreme low temperatures occur in New England on clear still nights.

Those are the conditions when cold air slips down to lower elevations. We live 400' above the village where lows of -40° are not uncommon. That's the bad news. The good news is that there is a pretty consistent snow cover and most years. Under the snow cover, frost does not go down very far - a few inches, say.

This year, in Central Vermont, we have had a consistent snow cover from November on. This means herbaceous plants are covered by a protective blanket. Not that peonies, for example, need protection. I have seen exposed peony eyes suffer worse than -20° with no damage. Forsythia is another tale. The traditional varieties are not flower-bud hardy in the colder parts of Zone 4. Typically they blossom in our area only on those parts protected by snow cover. The plant itself is not damaged since it is root and leaf-bud hardy in our area.

We have had a series of mild winters at a time when woody ornamental stems have become popular. The result is that we have planted many acres of untested material and this winter - abnormally cold - will be a partial test. It's only a provisional test because we have had a good snow cover and because the coming of winter was relatively slow. Some years we go from a mild fall to a bitter cold in a matter of ten days. The gradual onset of cold weather allowed our plants to harden off.

So for the shrubs that are poking out above the snowline we will get a test on bud hardiness. This includes four varieties of pussy willow, five varieties of PG hydrangea, three varieties of quince, many large-flowered clematis, various snowberry, winterberry and viburnums. I worry because there was a plum orchard on our land in the 1920's and fifty years later there were no plum trees left.

The economy still seems to be bad. All the business people I talk to think it much worse than the government figures seem to indicate. I have talked to several growers in our region who feel their business is seriously threatened. But the new isn't all bad. During economic downturns, people tend to vacation less and spend more time and money at home. This often translates into a boom for direct marketers of flowers, gardeners and landscapers.

The woody trials of new varieties for cut flower growers should get underway this season. Contact me if you are interested in doing some of the trailing.

I encourage members to get in touch with me before May if you have any concerns about the Association or unmet needs from the Association. In May we get busy pulling tulips from the ground.

Region Two

Mid-Atlantic

Delaware, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia

Dave Dowling (2004)

Farmhouse Flowers & Plants

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farmhouseflowers@aol.com

Sitting here looking out the window watching the snow fall again, it's hard to believe spring is really on the way. I think everyone is ready for spring after having the "Storm of the Century" in mid-February. (This being only year three of the century). After two years of non-winter in the Mid Atlantic, any amount of snow would have qualified as "Storm of the Century"... so far. By the time you read this, I hope spring has arrived.

There is a new group in Maryland: The Maryland Cut Flower Growers, Inc. This is actually a new name for an established group. It is an informal group that includes members from Maryland, Delaware and Virginia. Everyone is welcome to attend our meetings held at the Maryland Department of Agriculture building in Annapolis. Many of the members are fellow ASCFG members. Topics discussed range from seed suppliers and planting techniques, to harvesting and marketing cut flowers. The meetings are held from 9:00-1:00ish on a Tuesday in November, January and February. To be added to the mailing list send and email to Jane Storrs, Maryland Dept. Of Agriculture at: storrsjm@mda.state.md.us. Ask her to add you to the Maryland Flower Growers mailing list.

The ASCFG Mid-Atlantic Regional Meeting will be held here at Farmhouse Flowers & Plants in Brookeville, Maryland on Tuesday, July 29th. Now that this is in print, I'll

have to make sure everything gets planted on time, the weeds are kept in check, the grass is mowed, and all that other stuff people think we get accomplished on a regular basis. Topics to be covered are still undecided, if you have any topics you would like covered, let me know. By July I hope to have finished constructing the two new greenhouses that have been buried in snow since they were delivered in late January. Stanton Gill's two-day cut flower course and bus tour is planned for sometime in the fall. Contact Suzanne Klick at sk85@umail.umd.edu for more information.

Planning is underway for the ASCFG National Conference to be held in Lancaster, PA in the fall of 2005. I'll be looking for volunteers to help with the conference, so plan to avoid me if you don't want to get involved.

Region Three Southeast

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Jon Landwer (2004)

Dragonfly Farm

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fax (352) 589-6469

landwer@atlantic.net

Doesn't it seem that spring can't get to us soon enough? This must feel especially true for some of our Northern Members of Tennessee, Kentucky and the Carolinas who really have experienced some brutal conditions. Mother Nature has a way of letting us know we are not in charge. Now that all that is behind us let's focus on the matters at hand. Growing cut flowers.

Hopefully, everyone now knows we held our Regional Meeting at the

Burdette Coward Flower Farm in Punta Gorda, Florida (see the wrapup at www.ascfg.org/events.asp). We were fortunate enough to have members travel from out of region from Maryland, Virginia, Pennsylvania, Texas and Louisiana not to mention our own groups from North and South Carolina, Georgia, Alabama, and Florida. Our "Walk and Talk Tour", led by ASCFG member Butch Coward, proved to be awesome! An extravaganza of sites and information on growing and marketing that all of us found essential to a successful cut flower program.

Our theme for the meeting was "Growing Quality Consistently". We all found out that the Coward family had, pretty much, figured that out long ago. They have been growing cut flowers for 52 years! Interestingly enough, they encounter much of the same problems everyone else experience. We all discovered that much of their success is due to their reacting to obstacles practically and proactively. Let me repeat that.

Practically and proactively. This allows them to grow quality product, nearly year round, profitably and they can maintain a consistent supply for their customers during the respective seasons. If you were not in attendance then you missed a lot.

It will always be my personal goal to make sure that our Regional Meetings will be substantive and informative. I sure wouldn't want anyone to travel great distance and not be wow'd by the visit. Any sites that I select will be with you in mind, with the understanding that weather, seasons and market pressures will dictate when and how it all comes together. Any information and speakers will be cutting edge as well as refresher on cropping, tools and marketing. After all, aren't we in this business to have fun and make money? I hope that when we get ready for our next meeting that you want to attend. Rest

assured that I will make it worth the travel and the time spent away.

Which brings me to the coming summer. Sometime in June, Park Seed will be hosting their 'Grower Days'. If you have never been you will be in for a great treat. It is fun and educational. I intend to go and would love to see other members go and we could all meet for an *informal* 'get together'. A rendezvous of ASCFG growers. Give it some consideration.

As always, I enjoy grower-to-grower contact so please feel free to call me at (352) 589-6768 or email me at landwer@atlantic.net or come by and visit us on our farm in Eustis, Florida. Any ASCFG member is always welcome. I talk to or see fellow members nearly every day of the week. So don't hesitate. Let's chat.

Region Four

Midwest

Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, Wisconsin

Mimo Davis (2005)

WildThang Farms

14150 Bob Veach Road

Ashland, MO 650109317

phone (573) 657-7019

fax (573) 657-0620

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Every year, we plan on doing better than the previous season. Hopefully, we can profit from last year's mistakes, making better decisions. Each year we dream of growing some new hot crop that will make us some "serious cash."

As a part of our planning and dreaming for a great new growing season, we rarely include plans or dreams of the chewing, sucking, and piercing critters that are surely going to descend on our farms, and "help themselves" to a chunk of our profits.

Last season was a natural disaster starting with too much rain, then no rain at all, then came the insects on top of an ASCFG Regional Meeting. It was too much for me to bear! This year I find myself not having those wistful dreams of the wonderful crops I can grow, but more focused on the “action plan” to protect them.

We have added a new hoop house so that despite the spring rains we can keep on planting. To take care of those thrips that love godetia and campanula, I have ordered my beneficial insects right along with my plug orders. This way I can make sure that I can protect my crops immediately, rather than waiting until I have the insect problem, and then waiting some *more* for the delivery while watching the pests have a “homecoming dance” on my flowers.

The more information we can obtain regarding weather patterns, insect cycles, crop rotations and microclimates on our farms, the better. We become more equipped to develop a good management plan. Farm managers do not plan to fail, but many have failed to plan. With each new season we are better able to anticipate our crop needs and respond rapidly, giving us a better chance of making our field of dreams a reality. Are you planning your line of attack while planting your field of dreams?

Our Regional Meeting date has not been set. But we usually have the meeting the first week in July. We will keep you posted. Happy planting!

Region Five & North and Central

Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming, Alberta, Manitoba, Saskatchewan

Mark Koch, (2005) Robert Koch Ind.
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Region Five is at a crossroads. I recently returned from our ASCFG Board meeting in Pennsylvania. I am concerned about the viability of our Region. We have suffered continued decline in regional membership since 1996. We currently have only 30 members spread over the largest geographical region in the Association, stretching from Utah to Saskatchewan.

During the Board meeting, there was serious discussion about eliminating our region and consolidating existing members into adjacent regions. I see pros and cons about going ahead with this decision. With any group, there needs to be a critical mass to function. Our thirty members spread over such a large area does not constitute sufficient membership in my opinion. Many of our members have much more in common with other regions. For example, our largest concentration of members is in the state of Kansas with 8 members. These members certainly have a lot more in common with the Midwest than they do with the prairie provinces of Canada.

In my last column, I asked for your input about our region. (I even offered a free copy of Dr. Allan Armitage’s upcoming new edition of *Specialty Cut Flowers* to the first person who responded.) Unfortunately, I did not receive any response. I’m not totally sure why our region has declined, however. I think there are a few possible reasons. Many of our former members were involved exclusively in dried and preserved flower production. Market declines in this segment of the industry has led to much attrition in our region. Another is the state of the economy. Geographical constraints make holding *regional* meetings difficult.

In any case, the viability of this region is difficult at best. If you have any thoughts, I’d really like to know. It could also be the case that some of you would indeed like to see our

region consolidated into an adjacent region. If this is the case, I also would like to know.

As we are now well into spring, I wish all of you a wonderful, productive and profitable season; full of abundant sunshine, plentiful rain, and bountiful harvests.

Region Six South

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Dianne Cousins (2005)
Texas Sown & Grown, Inc.
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Richmond, TX 77469
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It’s been an interesting and productive winter here on the outskirts of Houston. Last year we had an unusually dry winter with a very late Arctic freeze that killed off probably half my crop. This year it seems like it has rained non-stop. The ground just starts to get dry enough to do tractor work when in comes another rain storm. I’m really starting to get tired of slogging in the mud. Just when I think that it’s safe to take up my row cover and throw it away another cold front comes in last night and we’re down in the thirties again. I was wearing shorts last weekend! That’s Texas for you....neurotic weather!

Mind you, I hate to complain too much after hearing about the horrendous winter they’ve had in the Northeast. People like Dave Dowling having their coldframes collapse under the weight of the snow makes me think twice about complaining anymore about our weather. I guess we’re actually lucky that we can grow out in the field this time of year.

This winter has been productive for me for a couple of reasons. First, we

got our cold frame up (no minor achievement!) and I was able to extend my season by starting sales of anemones the third week of January. It was very rewarding to go into my florists' shops in the dead of winter with these beautiful buckets of anemones. The colors were brilliant, like jewel tones, and the florists went wild for them. I have to say also that they were much prettier than what I saw coming from the wholesalers! Now I'm cutting ranunculus and they are also wonderful.

I chose godetia and sweet peas as my other two cold frame crops. My biggest hurdle with the cold frame was figuring out a method to roll up the sides easily. We ended up putting small screws through the Agra-lock metal pieces on the eave and a nail on the wood opposite it on the inside, then a piece of batten tape looped under the plastic. This seems to work fairly well.

We also put up a "greenhouse" this year where I can propagate seeds and store equipment. I put that in quotes because it's actually a wood frame and poly structure that extends off our barn; works for me!

My biggest lesson this winter has been regarding my soil health. What I learned I think is worth sharing. When I first started three years ago it was all I could do to just understand what needed to be planted and when and how. Between trying to remember, what spacing for this and what food for that, and do I cover the seed or do I need to support this, I honestly felt like my brain was screaming, "UNCLE, I can't take any more information!" I did a soil test, but then I didn't really pay much attention to the results, thinking, "we have great soil, it can't be that important". We also had a neighboring endless source of free composted horse manure, so I just kept pounding the ground with that and not understanding the effect that it was having.

Last summer I started having problems with plants stunting and blooming way too early. So, I took another soil sample in October and it came back saying that I was extremely low in nitrogen and excessively high in phosphorus and potassium. By this time my brain was ready to handle the information and work on solving the problem. The lab recommended avoiding all animal manure and treating ammonium sulfate or urea. I thought, "aha!, that's why my plants were coming up short; lack of nitrogen". I dutifully prepared my spring beds with the recommended amounts and started planting. I planted my delphiniums in November and by the beginning of January I noticed that there were a few that were starting to set bud when they were only a few inches tall. %\$#@^&!!! I was fit to be tied! I took another soil sample from the delphinium beds and the results that came back were almost exactly the same as the one I took in October. I'm thinking, "how can this be when I put the nitrogen in the beds that was recommended?"

A short time later a representative from one of the seed companies came by to visit. I decided to ask him about my problem since he had years of experience in the nursery business. The first question he asked me was, "What is your ph?" I told him that it was 7.7. He said, "Well, that's your problem". He explained to me that when the ph is high (over 7.0) it causes what nutrients are in the ground to be tied up and unavailable to the plant. So what I needed to do was lower the ph to anywhere from 5.5 to 6.8. I had just invested in a Dosmatic so he gave me a recipe to use for feeding that he says will lower my ph to at least 6.5.

Here it is: In a 30-gallon tank (I use a large trash can), mix 50 lbs. fertilizer (I chose Miracle Gro, Excel, 21-5-20), 4 lbs. of epsom Salts, and 4 oz. of battery acid. Set the injector at 200-250ppm. I was curious what the epsom salts were about. It turns out that this is

magnesium which is also a very important component and there is a certain ratio between your Mg and calcium (I think it was 1:3 but don't quote me). We have a lot of calcium here in our water coming off limestone aquifers so I also had this imbalance which was causing a chlorotic look in some of my plants. It was such a relief to finally have some understanding of what was going on in the soil!

I hope this will be helpful to some of you. To you beginners, if this is just way more information than your brains can handle right now, just file this article and come back to it later when you're ready. However, I want to stress that it is extremely important to test your soil every year and pay attention to your ph! I'm sorry to say I don't have results to report yet; I'm waiting for the rain to stop!

In my first column I mentioned that I wanted to introduce the region's membership to new members/growers. I've chosen to spotlight Sally Henley of Sally's Gardens in Kilgore, Texas. This is one incredible woman! She is 66 years old (she said it was okay to divulge her age!) and does all the work on her farm BY HERSELF! No kids, no husband, no hired help....she is tough! She says she hears other people, even younger than herself say, "Oh, flower growing is too labor intensive"; and she says, "What am I going to do, sit on the couch?" Anyway, she's in her second season. Her first year she didn't own a tiller so she prepared her beds by hand; with a fork and shovel! This year she has 3/4 of an acre cultivated and also a cold frame and greenhouse.

In the past she's owned a nursery which specialized in herbs and Texas natives so she came into this with some growing experience. She is also a retired nurse, but she says this is definitely harder. She's currently trying to market her flowers to florists in her area and is looking for other outlets. We wish you luck Sally!

I emailed some of you that our Regional Meeting would be the last weekend in July. We have changed the dates to August 1-3. The venue remains Fayetteville, Arkansas. We will be focusing on growing for local markets. They have a wonderful farmers' market in Fayetteville and we will be touring Mark Cain's farm. More details will be forthcoming via mailed flyers.

in the industry. If you are interested in running for the Board and would like more information on the responsibilities please contact me and I can tell you all about it.

I am planning to have a Regional Meeting sometime after Mother's Day. I haven't quite figured out what topics to cover so if any of you have any suggestions of what you would like to see please let me know.

Region Eight Northwest

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Region Seven

West

Arizona, California, Hawaii, Nevada

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Mellano & Co.

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mrmellano@mellano.com

I just returned from the ASCFG Spring Board meeting and would like to report on the new Buyers' Guide that will be coming out in the next few months. The association has been working overtime to produce this new tool to help members sell their products. It will be a comprehensive listing of all members who wish to be included and the marketing options for each member. This will be a very valuable marketing tool for members. The goal is to get the guide on every wholesale house buyer's desk in the country. This can only help members get their names out there and sell more flowers. I am very excited about this new service and can't wait to see the finished product.

My term as Regional Director expires this year and the association is looking for candidates who are interested in running. I have enjoyed my time on the Board. It is an interesting and challenging job. I have met and become friends with many new people. Serving on the Board has given me a new perspective

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Region Eight

Northwest continued

I am happy to report that the initial phase of a grant I received last fall for "Non Hardy Bulb and Perennial Production in Northern Climates" has finished with good news. All the bulbs that normally would not winter over outside in this Zone 4-5 climate will survive in an unheated but covered hoophouse. Ornithogalum, freesia, Dutch iris, brodiae, anemones and ranunculus, planted in mid-November, have all emerged intact.

Unfortunately, they emerged earlier than expected due to a record warm winter, during which ground temps inside the greenhouse were ten degrees warmer than last year. Consequently, the heat had to be turned on in late January in order to protect emerging leaves. And wouldn't you know it, the coldest weather of the year has hit as I write this in Late February. Luckily, keeping a greenhouse just above freezing isn't exceedingly spendy, even

in nasty weather. Not when you figure it against the possible profits to be made.

The unnaturally warm winter temps here means that aphid eggs weren't damaged by cold weather, so arising with the tulips was a bumper crop of bugs. Usually I don't have to worry about pest control until June, thanks to cold winters here, but it looks like this year will be a long one in terms of fighting insects. Thiodan, Cygon, Isotox, pyrethrins and ladybugs - I threw everything I could at the aphids, and still they come, though in smaller numbers. This year, it appears, will be the year I have to fine tune the battle with the bugs.

The chemical salesmen have a host of relatively new products that are more environmentally friendly than the old chemicals, many aimed at regulating insect growth to prevent them from reproducing. Genesis, an expensive but effective systemic

insecticide, was introduced for the potato growers here last year - it is applied on the potato seed piece and is effective through the entire growing season. This is particularly good news to potato growers, whose main concern is not so much bugs but the viruses carried by them - a crop can be ruined in just a couple days by the "leafroll" virus that peach aphids carry. By applying it only to the seed, far less chemical is needed - mere ounces rather than kilos - and it affects only those insects that attack the treated plant, rather than the host of natural predators and other insects native to the environment. Hopefully it will be labeled for cut flower and bulb use in the near future.

A website having sample labels of most chemicals for turf, ag, and ornamental use is cdms.net. Poke around and you'll probably find just about anything you want—medical instructions, registered crops, application rates, etc.

2003 ASCFG Executive Board

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DC and a short drive to the Atlantic beaches, we sell at four farmers markets a week (in season) and to florists in the Maryland/DC area. Call Dave Dowling at 301-963-5044, farmhouseflowers@aol.com, or visit FarmhouseFlowers.com

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ASCFG News

The ASCFG Welcomes its Newest Members

Bryan Boeckmann, Rocky Top Acres, Freeburg, MO
Keith Cramer, Cramers' Posie Patch, Elizabethtown, PA
Winnie Dabroski, Great Oak Butterfly & Cut Flower Farm,
St. Michaels, MD
Mary Fahey, Wise Acre Farm, Arbuckle, CA
Peter Ferrante, Wallkill View Farm, New Paltz, NY
Kim Hohlfeld, Estate Care, Sharon, CT
Wayne Houtby, Penglard Farms, Inc., St. Catharines, ON
Debbie Jackson, Chisholm Creek Flowers,
Valley Center, KS
Karen Kiebler, Ball Seed Co., Palmetto, FL
Catherine Lewis, Gloucester, VA
Bill Loftus, Cityview Flowers, Genesee, ID

Carol B. Martin, Bloomin' Blossoms, Vance, AL
Sean McManus, Pullman, WA
Jan McNair, J. Mac Farms II: Flowers & Plants,
Manning, SC
Ashley Nunnenkamp, Sutton, NE
Wendy Reisman, Buena Tierra Farm,
Leucadia, CA
Cathy Rogers, Bloomin' Joy, Burnt Hills, NY
Cindy Silvia, C.S.E. Flowers, Elk Grove, CA
Dennis Stowell, Tom King Farms, Ramona, CA
Bruce Swabb, Little Sparrow Farm,
Bonner Springs, KS
Lisa Vermeulen, Fernville, MI
Bobby Wallace, B & W Growers, Lakeland, FL

Have you considered how you might serve the ASCFG?

If you have a vision or ideas or just want to get involved this is your opportunity to be heard! Do you know an ASCFG member who would make an effective Board member but is too shy to nominate herself? Tell us! Nominations are now open for Vice-president, President, and Regional Directors for Region Seven (West), and Region Eight (Northwest). For more information on what's involved and what's in it for you, please contact the ASCFG office, or Janet Foss at

jfoss@ispwest.com

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An ASCFG

Regional Meeting

is coming to your area!

Mid-Atlantic Regional Meeting

July 29, 2003

Farmhouse Flowers & Plants

Brookeville, Maryland

For more information, contact Dave Dowling at
(301) 963-5044 or

farmhouseflowers@aol.com

South Regional Meeting

August 2 & 3, 2003

Dripping Springs Garden

Huntsville, Arkansas

For more information, contact Dianne Cousins

at (281) 342-4185 or cousins@wt.net or Janet

Bachmann at (800) 443-9824 or

janetb@ncat.org

ASCFG Bulletin Board - Are You Online?

Each week, more ASCFG members sign up for the bulletin board, an online discussion group for growers of all sizes, across the country. Here's more information on how to make this valuable service work even better for you.

Using the Search Function

The bulletin board has a great feature that lets you easily find answers to many of your cut flower questions. When you log on, look about halfway down the left side of the screen for the "Keyword Search" button. Follow that link, enter a word or phrase, and click on "Perform Search." You'll be amazed at what you'll find. Contact Dave Dowling at farmhouseflowers@aol.com if you need any help with the bulletin board.

Setting Up Email Notification

Another great feature of the ASCFG bulletin board is email notification. The feature allows a member to receive, via email, information that is posted to the bulletin board. You can choose which Topics you wish to receive, such as Fresh Flowers, Grasses, Herbs, etc. It's recommended that you sign up for all the Topics. You won't want to miss anything. Signing up for email notification is easy. Just log onto the bulletin board, then on the lower left side of the page, click on Edit Profile. Then click on Email Notification, check the boxes for the Topics that interest you (probably all of them), then be sure and click on Save This Information. That's it, you're done. (Do it now, before you forget.)

Netiquette for ASCFG Electronic Communications

- ◆ Please keep in mind that this is a forum for flower farmers and allied businesses, and confine your messages to relevant topics about flower growing and marketing.
- ◆ More than 200 people are subscribed to this bulletin board; please be respectful of other people's time. Send personal messages such as thanks or kudos just to the individual who posted the message to which you are responding. Don't post whatever pops into your head. Do a little research before asking a question or posting a response. Perhaps someone has already answered the question earlier, perhaps the information you need is in the Armitage book on your shelf.
- ◆ Bear in mind that what you write will be read far and wide. Don't write anything that is libelous or could otherwise cause a liability issue for the Association. Even comments that are not libelous can be unfair, and can do significant and long-lasting damage. Don't take complaints about suppliers to the bulletin board without first being certain of your facts. If you got one bad shipment of plants, don't write on the forum that the supplier is bad. Don't spread gossip, as in "I heard they declared bankruptcy." These rules about fairness and validation don't preclude the very valuable exchange of information about bad suppliers or buyers. For example, once a member asked if anyone knew of a certain buyer who wanted her to ship peonies. Several members recounted experiences where they had trouble getting paid by this person. Without slandering anyone, the message got across and our peony grower was warned. Be factual in your comments.
- ◆ At the end of your message please indicate at least your name, e-mail address, your location and/or your hardiness zone. Since many of the topics discussed pertain to flower production, it is helpful for others to know where you are growing the plants in question.
- ◆ Material posted to the ASCFG bulletin board remains the intellectual property of the author of the message. Information may not be published elsewhere without formal permission of the author.
- ◆ The bulletin board is not intended to be an advertising venue for suppliers, even if they are Association members. Please don't post your price list or availability list. However, if you read that someone is looking for a service or product that you can supply, you are encouraged to respond to that person privately with your information. Growers may, however, offer the occasional notice that they have something for sale: a piece of equipment or an abundance of dried static, for example. Members are also encouraged to post flower prices, when appropriate, for the sake of helping others know what to charge.
- ◆ Please participate! Your ideas are important. If you have observed these rules of netiquette, your questions and comments are just as valid as any other member's. You will find the ASCFG to be a supportive and cooperative group.

Mark Your Calendar for Vancouver in November!



The 2003 Conference Committee has been working since last year to bring you the best speakers and programs for the meeting November 12-15. Here are a few highlights:

Wednesday, November 12 *Growers' School*

Growers and educators from the United States and Canada will lead this one-day program focusing on the basics of cut flower production. The Growers' School was created for new growers, but every year, long-time growers attend because, as they tell us "You can always learn something new!" Scheduled speakers include Janet Foss, Jim Matteoni, John Dole, Kim Wickwire, Carol

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Barnett and Buck Godwin. Attendance for the Growers' School is limited; be sure to register as soon as you receive your packet!

Thursday, November 13 *Tours*

Taking advantage of the extensive and established cut flower community in the Vancouver, we plan to visit four area growers as well as the famous United Flower Growers Auction in Burnaby. Blue Magic Greenhouses grows ilex, Oriental lilies, hydrangea and viburnum; using biological controls, Xenios Dutch Growers produces stocks, lisianthus and tulips in free-standing hoopouses and Dutch Venlo greenhouses; automation will be on display at Ravenek Greenhouse, including a planting cart, bunching line and bucket filler; and at Smit Nursery, we'll see solidago, astilbe, and delphinium produced in rolling greenhouses. Plan for a full day, and don't forget your camera and raingear!

Friday & Saturday, November 14-15 *Sessions*

A full lineup of floral industry experts fill Friday and Saturday with sessions on production and marketing. Allan Armitage and Chris Beytes will share their views on the international scene; Hitomi Gilliam, AIFD, will use ASCFG members' products for the Design Show Saturday morning; updates on new varieties and postharvest handling will be presented by John Dole and others; and sessions on everything from lisianthus and tulips to biodynamics and employee motivation.

The Trade Show, Research Auction, Regional Meetings, and a possible Sunday tour of VanDusen Botanical Gardens round out the events of the week. Look for more information in the mail later this summer. Start checking travel plans now!



VanDusen Botanical Garden



TROUBLESHOOTING

The deadly botrytis is the worst disease problem to deal with. If botrytis starts growing on the dead leaves, it will send out billions of spores. These spores will land on the poinsettia bracts and leave a tiny pinprick when they germinate. Too many spores and the bracts are ruined, and in bad conditions the spores will grow and consume the bract. Not a pretty sight! A number of compounds are registered to control botrytis - your extension service can bring you up to date. Our first line of defense is to keep the beds clean. Good airflow is also crucial, and horizontal airflow fans work well. The main thing is to stay ahead of the disease. Once you see the tiny marks, the damage may be done.

Poinsettias are also susceptible to a multitude of root diseases. This is why clean soil is essential in ground beds. Even in potted soil-less mixes root rots are a problem. We used to use all the usual drenches such as Subdue and Banrot, but for the past few years we have been getting as good or better control using Rootshield (Plantshield), a beneficial fungus applied as a drench. We apply soon after planting, and a couple more times one and two months later.

This has given us excellent disease control in both pots and ground beds. Between solarization and Rootshield, we had zero root rot in our ground beds last year - much better than in the pots.

If you are having problems with minor nutrient deficiencies, check for a low level infection of pythium. This can sometimes affect micronutrients without being apparent as a disease.

Your biggest insect problem, hands down, will be silverleaf whitefly. Not might be - WILL be. Guaranteed. They will be on the cuttings, or else they just spontaneously generate once you get them. So be ready!

These bugs are smaller than your friendly greenhouse whitefly, and can slip past your notice until there are millions of them. We always use yellow sticky traps to monitor. Reams of info are currently available about this pest, so talk to your state ag folks.

For the time being these whiteflies are easily controlled using a systemic insecticide called Marathon. This is much milder than the old systemics like Temik and Disyston. In fact, it is labeled for aphids in leaf lettuce under another name (not exactly a reassuring thought!). It is applied as granules to the soil and watered in.

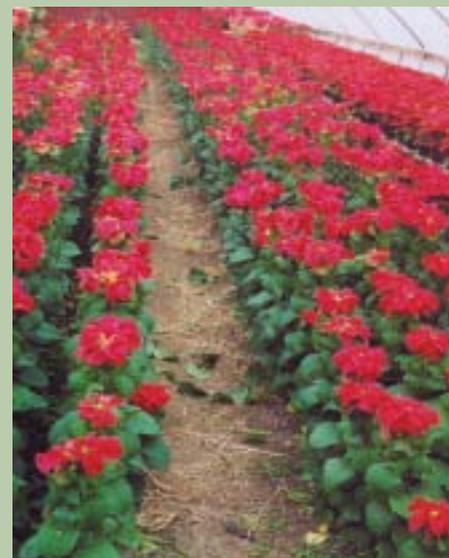
Marathon works well in potted crops, but because the cuts are a longer season crop, you can run into trouble if it is applied too early. We put ours on in mid-August, and we ran into some late-season whitefly as the effect wore off. We can't recommend two applications,

because this compound is already overused and resistance is surely just around the corner, so you'll want to try to limit populations early in the crop, and apply Marathon later, around mid-September. The problem is, not many other compounds are effective. In our potted crops, we have had good control using weekly releases of lacewing larvae. This can work well with a Marathon program.

You can also run into trouble with thrips and spider mites, but if you are controlling whitefly, you probably are getting the other guys too. Look out for late season mites.

POSTHARVEST HANDLING

The most amazing thing about this cut poinsettia is that it has an incredible vase life. Two weeks is easy, and three weeks is not out of the question. The leaves are the first to go, but the bracts last forever. We have had some last for 6 weeks in good condition! Postharvest handling of this crop is all about leaf retention. The leaves are so dark green and beautiful, you want to keep them around as long as possible.



We begin cutting the stems just as the little yellow cyathia (the actual flowers) in the center begin to open. We cut right down at the branching point, and remove about 1/3 of the lower leaves. We use disposable rubber gloves when cutting, because they are full of latex, and it is very hard to get it off your hands. The cut stems take up a lot of room. Don't pack them too tight or bruise the leaves, or they will bleed latex. Our stems were huge, and we packed about 30 in a large Procona bucket. It looks to us like this is a great crop for local production because they are too fragile for shipping.

There is a lot of anecdotal info about treating the stem for latex, but we have found that plain water works just fine. We have tried alcohol dips, flame searing, hot water dips, and hot water soaks, but we believe they aren't necessary. In fact, the searing and hot water damaged the stems, and set up problems later on with decay. Use warm water to cut into.

It appears that water quality is critical in preventing leaf drop. John Dole and crew at North Carolina State have found that pure or high quality water gave as good a vase life as preservatives. We have poor quality water, though, and in our trials, preservatives made a significant difference. Looking at days before leaf yellowing, here is what we found:

Well water only - 4 days
Chrysal Universal - 14 days
CVB (type of biocide) - 5 days
Universal + CVB - 14 days
SVB (an anti-leaf yellowing compound) - 3 days
Chrysal Professional 2 (holding solution) - 14+ days

All solutions used our well water. The bracts on all treatments looked great after 2 weeks. Overall, the Professional 2 looked the best up to the end. Ironically, the SVB, a compound used for leaf yellowing in *Euphorbia fulgens*, had no effect on this *Euphorbia*. We used Chrysal products because we had them on hand, but it seems to us that any good preservative would work well.

We also did a cooler storage trial. This time we were looking at bract damage. Potted poinsettias are very sensitive to chilling damage, so we didn't have high hopes. We put them in a cooler at 40 degrees for 3, 7, and 10 days. To our

surprise, the 3-day group looked great - no damage. The 7-day group also looked OK, but there was a bit of marginal burn, and a slight overall blue tint to the color. The 10 day group was toasted - significant bract damage and bad color. The stems were stored in plain well water. The leaves looked good in all treatments.

MARKETING

We were able to cut an average of 2.5 salable stems per plant, or 5 stems per sq. ft. We sold the stems for \$2.00 per stem wholesale, or a gross return of \$10.00 per sq. ft. Your own production costs will vary, and as we mentioned, heating costs will likely be your biggest expense. Here in Texas, they are not so bad. Greenhouse costs are figured out as a cost per sq. ft. We figured an overhead cost of \$.10/sq. ft. per week for the shade house period (12 weeks) and \$.25/sq. ft. per week for the heated greenhouse time. That gave us an overhead cost of \$3.70/sq.ft for the crop period. Cuttings ran around \$.75 each, so add \$1.50. So our base cost of production was about \$5.20 per sq. ft. We have to add to that the harvest and delivery costs, and the chemicals and fertilizer, but overall that was slight. Labor and supplies were minimal (No pots!). There is plenty of room for profit in this crop.

We sold our stems at wholesale. If you deal with direct marketing to florists or retail, you could potentially sell the stems for much more.

In the past, we have grown just red, but these new 'Renaissance' poinsettias are going to be available in 4 colors - red, white, pink, and peppermint. Apparently, the cuttings will be grown by Ecke's, and Fred C. Gloeckner will be the broker for them. Andrew Lee at Gloeckner told us that they have a standard minimum order of 100 cuttings per color and 300 cuttings total, but they will have a trial collection available of 200 cuttings - 50 per color. This is a great way to give this new crop a try without risking your shirt! He also said Gloeckner will have a detailed culture sheet available.

And why are we giving everybody the growing secrets to the best new cut we've seen in years? Basically in hopes of keeping the plant material available. The trouble with specialty cuts is that we are a relatively small group, and Ecke isn't going to maintain an entire program just for one grower in Texas! We think this cut flower has incredible potential, and the best way to make sure it stays around it to make sure everybody knows about it. This cut poinsettia has apparently become wildly popular in Japan, and Ecke hopes that it may be able to break into other holiday markets here in th U.S. We held a few potted 'Renaissance' until February, and the stems looked great in Valentine's Day bouquets! We think this flower could change the entire image of poinsettias. Our customers think so too.

Letter from Oberlin

It will be ten years this summer since the ASCFG moved into its office at 17 1/2 West College St., “on the square” in picturesque downtown Oberlin. The building dates from 1867, and, as you can see, is in need of some repair. As Betsy Hitt said after a visit in 1996, “It looks pretty much like every agriculture non-profit office I’ve ever seen.” Following Bob Wollam’s lead explaining more about the workings of the ASCFG, here are a few shots that will give you a better idea of who we are and where we are.



The ASCFG office is conveniently located above a florist shop.



Executive Director Judy Laushman



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Picturesque Oberlin - Where we get it all done!

Inside this Issue



Grower Profile



Cut Flower Poinsettias

Conference Preview



Cut Flower or Weed?



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