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EDEN: AN EASTER LILY WITH POTENTIAL

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Roy Larson wrote the last NC State Easter lily selection trial summary for the June 1992 issue of the Bulletin. Since that time, the Easter Lily Research Foundation continued perfecting Easter lily cultivars for growers and Roy continued to conduct selection trials until he retired in 1996. This year we evaluated two named cultivars and five numbered selections. 'Eden' looks very promising as a new cultivar for forcing as a flowering pot plant, so we felt it was time to write another trial summary.

Materials and Methods

Bulbs were received from the Easter Lily Research Foundation on 28 October 1997. They were case-cooled at 40 °F for six weeks beginning 6 November 1997. Bulbs were removed from the cooler on 18 December 1997 and potted into 6" standard pots containing Fafard 4P. Pots were placed in the greenhouse set to a 65 °F night temperature / 72 °F day temperature. The newly

planted bulbs were drenched with Subdue on 29 December 1997 as a root rot preventative. Plants were grown in a glass house with no light reduction. They were fertilized at each irrigation with 250 ppm nitrogen supplied from 15-0-15.

Granular Marathon was applied during mid-January to control aphids. No growth regulator was used and no effort was made to control plant height with negative DIF or with cool temperatures during the first two hours of light each morning. Plants were not moved to control timing. Plant heights were measured from the top of the pot to the top of the plant and recorded on January 23, February 6, and February 20. Final height was recorded when the first flower was open on each plant. Final heights reported include the pot height as well as the plant. Dates of shoot emergence and first open flower were recorded. Flowers and buds were also counted.

(Text Continued on Page 4)

Table 1. Growth and flowering of seven Easter lily selections or cultivars in 1998. Trials conducted at NC State University, Raleigh.

Selection	Bulb size (inches circumference)	Plant height (inches)				Days to shoot emergence	Days to 1st open flower	No. of flower buds	
		1/23	2/6	2/20	Final*			n**	n**
Eden	6 1/2 - 7 1/2	3.8	7.0	11.2	22.9	19.1	89.5	6.7	10
	7 1/2 - 8 1/2	4.1	7.8	12.4	24.8	18.9	87.9	8.2	10
	8 1/2 - 9 1/2	4.7	8.3	13.7	27.5	19.4	88.2	9.2	5
Nellie White	7 1/2 - 8 1/2	2.8	6.4	9.8	28.5	22.3	101.6	4.4	10
	8 1/2 - 9 1/2	3.9	7.4	11.7	28.5	20.2	96.4	5.4	10
93-19	9 1/2 - 10 1/2	6.9	11.2	16.8	31.9	14.0	94.0	11.6	5
93-24	7 1/2 - 8 1/2	6.8	12.0	19.7	34.1	13.6	87.2	8.2	5
94-24	7 1/2 - 8 1/2	5.1	8.1	11.6	25.3	16.2	98.9	5.2	10
	9 1/2 - 10 1/2	7.0	10.3	13.0	24.7	10.6	95.8	10.0	5
94-31	7 - 8	5.1	9.1	19.8	31.9	17.3	96.3	6.5	7
	8 1/2 - 9 1/2	7.5	13.3	15.2	36.7	16.7	97.3	11.3	3
94-36	6 1/2 - 7 1/2	5.0	9.3	13.9	26.4	15.4	92.3	2.7	7
	7 1/2 - 8 1/2	5.9	9.8	14.2	26.0	13.4	91.6	4.2	5

*Final height includes the pot; other heights do not.

**n = number of bulbs forced.

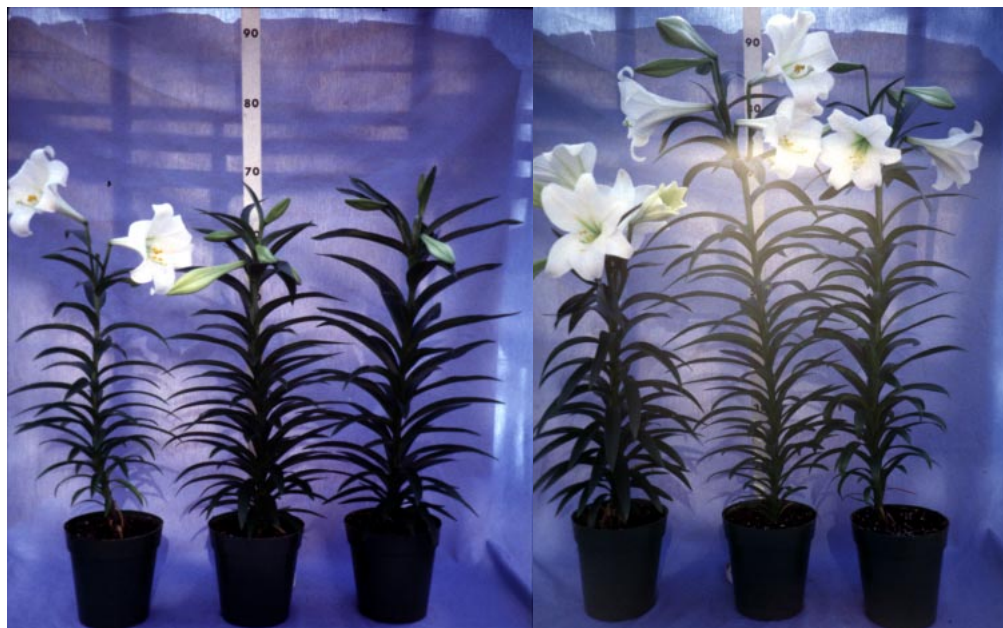


Figure 1. L-R: 94-36, 94-24, 'Nellie White', 'Eden', 93-24, and 94-31. The first five selections are 7 1/2 - 8 1/2 bulbs. The last is a 7 - 8. Plants photographed on 26 March 1998.



Figure 2. 6 1/2 - 7 1/2 '94-36' and 'Eden'. Plants photographed 26 March 1998.



Figure 3. 8 1/2 - 9 1/2 'Eden', '94-31', and 'Nellie White'. Plants photographed 26 March 1998.

Table 2. Final height, days to 1st open flower, and number of flower buds per plant comparisons within bulb sizes.

Bulb size/ selection	Final ht. (inches)	Days to 1st open flower	No. of flower buds	n*
6 1/2 - 7 1/2				
Eden	22.9 b**	89.5 a	6.7 a	10
94-36	26.4 a	92.3 a	2.7 b	7
7 1/2 - 8 1/2				
Eden	24.8 c	87.9 d	8.2 a	10
Nellie White	28.5 b	101.6 a	4.4 b	10
93-24	34.1 a	87.2 d	8.2 a	5
94-24	25.3 c	98.9 b	5.2 b	10
94-36	26.0 c	91.6 c	4.2 b	5
8 1/2 - 9 1/2				
Eden	27.5 b	88.2 a	9.2 b	5
Nellie White	28.5 b	96.4 a	5.4 c	10
94-31	36.7 a	97.3 a	11.3 a	3
9 1/2 - 10 1/2				
93-19	31.9 a	94.0 a	11.6 a	5
94-24	24.7 b	95.8 a	10.0 b	5

*n = number of bulbs forced.

**Mean separations within columns conducted for each bulb size. Means followed by different letters are significantly different at $\alpha = 0.05$.



Figure 4. 9 1/2 - 10 1/2 '94-24' and '93-19'. Plants photographed 26 March 1998.



Figure 5. 7 1/2 - 8 1/2 'Eden' and 'Nellie White' at flowering. 'Eden' was photographed 20 March 1998 and 'Nellie White' was photographed 7 April 1998. Note the differences in height, flower number, and canopy architecture.

Results and Discussion

We did not receive the same bulb sizes for every selection, so we could not compare all selections to our commercial control, 'Nellie White' (Table 1). Direct comparisons were made among selections within each bulb size we received (Table 2).

There were definite height differences among the selections, and bulb size did affect final height for some (Figures 1–4). 'Eden' tended to be shorter than the other selections for all three bulb sizes evaluated. The 6 1/2 - 7 1/2 and 7 1/2 - 8 1/2 'Eden' were significantly shorter at first flower than 'Nellie White', our commercial control. Both bulb sizes of 94-24 and 94-36 produced plants shorter than 'Nellie White' while the 93-19, 93-24, and 94-31 plants were taller than the commercial control. Plant height increased with bulb

circumference for 'Eden' and 94-31; bulb size did not affect height of 'Nellie White', 94-24, or 94-36. What is the desired height for an Easter lily? I like Bill Miller's assessment of the perfect height: "The best height for your plants is the height your customer wants them." An informal poll of lily growers this spring indicated that a general target height (including the pot) is about 22 inches. All of the selections in our trial exceeded this height indicating that they all would need some type of height control.

The only significant differences in forcing time observed was among the plants arising from the 7 1/2 - 8 1/2 bulbs (Table 2). 'Nellie White' was slower than the other selections followed by 94-24, 94-36, 'Eden', and 93-24. Due to greenhouse space constraints, we had to force our lilies at warmer-than-desired temperatures, so our ability to target the Easter marketing date was nil. However, although our timing was off, the study does give a good comparison among the selections with respect to relative timing during forcing for case-cooled bulbs.

All bulb size / selection combinations averaged more than four flower buds per plant, with the exception of 94-36. Four seems to be the minimum number of flower buds required for the mass market while many high-end retail shops require five to six buds. 'Eden' averaged more than six buds per plant, regardless of bulb size tested. Among the plants produced from 7 1/2 - 8

1/2 bulbs, 'Eden' and 93-24 averaged over eight buds, almost twice the number found on the other selections, including 'Nellie White'. The 94-31 and the 9 1/2- 10 1/2 94-24 plants averaged over 11 buds per plant; a very impressive bud count.

There were other differences among the selections that we were unable to quantify -- leaf width, leaf color, and canopy architecture (Figure 5). For example, 'Eden' has relatively broad leaves and the foliage tends to curl downward slightly at the leaf tip. This is definitely different than 'Nellie White', but who is to say which canopy architecture is more desirable? We did not observe any differences among selections or bulb sizes with respect to lower leaf loss or leaf yellowing nor were there any clear difference in

flower morphology (though 'Eden' tended to have a more open appearance than other selections).

The conclusion from this report differs from Roy's 1992 evaluation. This time there does appear to be a lily selection better than 'Nellie White'. The greater number of buds plus less height and slightly shorter forcing gives 'Eden' a definite edge over the commercial control. Hopefully future studies and other trials around the country will confirm this and we can look forward to a new cultivar for future Easters.

The authors wish to acknowledge the Easter Lily Research Foundation for sending bulbs for the evaluation, to Fafard for contributing the 4P substrate, and to Scotts for donating the fertilizer.

Calendar of Events

Event	Date	Time	Location and contacts
NCSU Bedding Plant Field Day	Wednesday 29 July	9:00 am to 3:30 pm	Horticulture Field Laboratory, Raleigh, N.C. Contact Bonnie Holloman at 919.779.4618 for further details.
NCCFGA General Membership Meeting	Wednesday 29 July	3:50 pm	McKimmon Center, Raleigh, N.C. Call Bonnie Holloman for further details.
NCCFGA Board Meeting	Wednesday 29 July	4:15 pm	McKimmon Center, Raleigh, N.C. Contact Bonnie for further details.
Finalizing the Poinsettia Crop Workshop	Tuesday 15 September	TBA	Catawba Co. Cooperative Extension Center, Newton, N.C. Contact Brian Whipker at 919.515.5374 for further details.
	AND		
	Thursday 17 September	TBA	Cunningham Research Station, Kinston, N.C. Contact Brian Whipker.
Specialty Cut Flower Growers Conference	Wednesday–Saturday 28–31 October		Raleigh, N.C. Contact ASCFG at 216.774.2887 for more information.
NC State University Poinsettia Open House	Thursday 3 December	9:00 am to 3:00 pm	Horticulture Field Laboratory, Raleigh, N.C. Contact Bonnie for more details.
	AND		
	Sunday 6 December	1:00 pm to 4:00 pm	Horticulture Field Laboratory, Raleigh, N.C. Contact Bonnie for more details.

GUIDE TO SUCCESSFUL OUTDOOR GARDEN ASTER PRODUCTION

**Robert T. Eddy, Purdue University and
Brian E. Whipker, NC State University**

Most garden asters are cultivated varieties of the fall-blooming wildflower, *Aster novi-belgii*, or Michaelmas daisy. They are native to the United States and can be seen blooming along roadsides during the fall. From the wild types, Danish breeders have selected for new colors and compact shape. As a floriculture crop, they can be grown for cut flowers, an indoor pot crop in four-inch or six-inch pots, or an outdoor perennial in six-inch pots or larger. This article covers the commercial production requirements for perennial garden asters.

Schedule

Garden asters flower under short days similar to mums and they can be grown on a schedule similar to garden mums. Grown under natural days, they flower one to two weeks earlier than garden mums. The earliest cultivars are ready to sell in mid- to late-August. Later varieties flower throughout September. They can be grown

anytime of the year by manipulating photoperiod. In general, asters are kept vegetative using long days (>14 to 16 hours of daylight) until size is achieved, then forced into flower with short days (Schwabe, 1985). Very short days will induce dormancy. Therefore if growers are going to use shade cloth to induce earlier flowering, daylengths <10 hours should be avoided to prevent dormancy and the resulting bud abortion. Flowering can be delayed with a combination of high temperatures, averaging > 68 °F, and high light. The flowering of an outdoor crop can be influenced by summer temperatures. Asters can be planted at the same schedule, size of pot, and substrate as used for garden mums. They can also be planted up to 2 weeks later than a garden mum crop grown under similar conditions, because they produce an abundance of growth just prior to flowering. Rooted cuttings planted at the beginning of June may require a 1 1/2 gallon container; mid-June an eight-inch container; July a six-inch container for "fast-cropping". These later plants will require less pinching and perhaps more cuttings per pot. Eddy and Hammer (personal comm.) produced acceptable sized plants with one cutting per eight-inch pot when planted on June 9.

Keys to Success with Garden Asters

1. Plant cuttings upon arrival
2. Start the crop 2 weeks later than mums
3. Provide sufficient water
4. Manage your fertility program
5. Space plants for proper growth and good air circulation
6. Pinch plants and apply plant growth regulators to control plant height

Pinching

Pinch 7 to 14 days after potting rooted cuttings, removing all but 3 to 5 internodes. Pinch every 14 to 18 days until July 25, again leaving 3 to 5 internodes on each branch which has emerged since the previous pinch. Shears can be used. For a crop planted around June 9, three pinches are required.

Plant Growth Regulators

A plant growth regulator should be applied after the final pinch, when 1 1/2" to 2" of new growth has occurred. This will reduce final plant height, intensify the dark green color of the foliage, and most importantly create rounder, more uniform plants. Foliar sprays of either B-Nine (two applications at 5,000 ppm, applied one week apart) or Sumagic (a single application at 80 ppm) produced rounder, more uniform plants (Eddy and Hammer, personal comm.). Other recommendations include B-Nine at 1,500 to 2,000 ppm applied as needed (Luczai, 1992) or two applications of B-Nine at 2,500 ppm (McAvoy, 1993).

Fertilization and Irrigation

Maintain the substrate pH between 5.8 to 6.5 for a soilless substrate. Use a complete N-P-K fertilizer providing 200 ppm N and K₂O via irrigation water. A rate of 150 ppm N and K₂O may be sufficient for a soil-based substrate. Asters are less salt tolerant than mums. Excessive fertilization causes the plants to grow large and tilt in the pots. Growers need to manage their fertility program to avoid excessive salt build-up. Measure the substrate solution electrical conductivity (EC) routinely and utilize monthly leaching of salts, if EC is too high. Low fertilization results in small plants. Fertilization outdoors may need to be supplemented with a higher rate or a slow release fertilizer like Nitroform (38-0-0) if excessive leaching occurs due to heavy rains. Though asters are more drought tolerant than garden mums, drought stress can cause yellowing of the lower leaves. Fertilization should be terminated when the flowers begin to open to improve flowering longevity. Foliar analysis values for garden aster are provided in Table 1.

Spacing

Use the same spacing as for garden mums. 18" centers for a six-inch to eight-inch pot.

Table 1. Foliar tissue standards for garden asters.

Nutrient	Recommended concentration
Nitrogen (N) (%)	2.2 - 3.1
Phosphorus (P) (%)	0.24 - 0.65
Potassium (K) (%)	3.3 - 3.7
Calcium (Ca) (%)	0.98 - 1.7
Magnesium (Mg) (%)	0.18 - 0.35
Boron (B) (ppm)	37 - 46
Iron (Fe) (ppm)	162 - 180
Manganese (Mn) (ppm)	65 - 273
Zinc (Zn) (ppm)	26 - 121

Values are reported on a dry-weight basis, based on a limited number of plants. The most recently matured leaves of field grown plants were sampled when flower buds were present, but prior to flowering. Samples taken from vigorously growing healthy plants and are only guidelines.

Source: Armitage, 1993.

Insects

Asters have few insect pests. If needed, follow the same insecticide regime as for garden mums. Bees are attracted to aster flowers. Market the plants when one-quarter of the blossoms are open to prevent problems with attracting bees.

Diseases

Rust and powdery mildew are the two major foliar diseases of garden asters. Other possible foliar diseases are downy mildew, *Alternaria* spp. *Cercospora asterata*, and *Septoria* spp. Cultural practices to control foliar disease include avoiding wet foliage during irrigations and select a production site that provides adequate air circulation. Potential root/stem diseases include

Pythium, Phytophthora, Fusarium, Rhizoctonia, and *Verticillium*.

Future Considerations

Garden asters are extremely hardy. Given this fact, future follow-up sales may be limited. In addition, once established in the yard, garden asters are aggressive growers and some cultivars like Blue Butterfly require up to 6 ft² of space.

Varieties

Make a majority of your order blue, red, and purple. The top selling varieties for Yoder are: Patricia Ballard, Frida Ballard, Professor Kippenberg #2, Celeste, and Winston Churchill.

Table 2 contains additional growth information about the top five varieties.

Marketing

Garden asters provide another flowering crop to boost your fall sales. Along with garden mums, ornamental cabbage and kale, pansies, and other cool season annuals, garden asters can complete your product line. Though they can be grown on a schedule similar to garden mums, they are a new crop and should have their special features promoted.

New Product: There is always excitement over something new. Your competitors probably won't have them either.

Table 2. Descriptive information about the top five garden aster cultivars from Yoders.

Variety	Color	Vigor	Flower Size	Natural Response	Response Group (weeks)	Comments
Celeste	Lavender / Blue	Medium	Medium	Early	5 1/2	A striking dark blue-petaled flower with complementary yellow disk.
Frida Ballard	Raspberry	Medium	Medium	Mid	5	Very close in performance to Winston Churchill, except slightly darker color and later.
Patrica Ballard	Pink	Medium	Large	Mid	5	Large lavender-pink flowers and moderate vigor. Avoid daylengths less than 10 hours for best bud set.
Professor Kippenberg #2	Lavender / Blue	Short	Large	Mid	NR	Dwarf variety with large, blue-purple flowers.
Winston Churchill	Raspberry	Medium	Large	Early	5	Top selling variety for Yoders.

New Colors: Blue has never been achieved in a garden mum, so this color is sure to draw attention, as will the bold red varieties.

Late Blooming: Color holds up into November on some varieties.

Unique Habit: Few varieties achieve the perfect globe shape, but customers may like their natural, "wildflower" appearance.

Perennial: You can guarantee it as a winter hardy plant.

Companion to Mums: The smaller, daintier aster flowers are an excellent compliment to large mum blossoms. Blue varieties go well with yellow mums; pink varieties with lavender mums; purple with white mums.

Cut Flower: Stems can be used as a cut flower. Harvest the stems when at least 20% of the flowers have opened and pollen is visible.

Recommendations

Make room for 100 to 200 garden asters for the fall. Often there are minimum order requirements, so consider pooling your order with another grower. Pot them up two weeks

after your mums and grow them on the same schedule. Purchase large, colorful care tags and a promotional kit if you retail. Plant some display beds containing garden asters and garden mums to promote asters and let consumers know what landscape design possibilities can be done with them.

For Further Reading

- Armitage, A.M. 1993. Aster, p. 168–172. In: Specialty cut flowers. Timber Press, Portland, Oregon.
- Humm, B. 1997. Aster answers: pot crop success. *GrowerTalks* 60(14):55.
- Luczai, R. 1992. Garden asters: popular in the European market as a potted plant. *Professional Plant Growers Assn. Nwsl.* 23(8):20–21.
- McAvoy, R. 1993. Growing garden asters. *Conn. Greenhouse Nswl.* (174):13–16.
- Schwabe, W.W. 1985. *Aster novi-belgii*, p. 29–41. In: A.H. Halevy (ed.), *The handbook of flowering*, vol. 5. CRC Press, Boca Raton, FL.



Don't Miss The NC State University Bedding Plant Field Day

Wednesday, 29 July 1998

Horticulture Field Laboratory and McKimmon Center
Raleigh, NC

Call the NCCFGA office at 919.779.4618 for registration information.

WINTER ANNUAL TRIAL SUMMARY

Douglas A. Bailey, Dept. of Horticultural Science, NC State University

During November 1997 through April 1998, we evaluated 152 pansy selections, 31 viola entries, and two English daisies; and recorded how well they performed in the North Carolina landscape.

The trial gardens are located at the North Carolina State University Horticulture Field Laboratory, 4301 Beryl Road, in Raleigh. The site is located on lat. 35°47'N, long. 78°42'W with an elevation of 400 feet. Transplants grown in 2.5" x 2.2" containers were planted in the trial garden on 4 November 1997, and plant spacing in the trial was 10" x 12" (in-row x between-row spacing). Twelve plants of each entry were used to evaluate the performance of single-color

cultivars, and 24 plants (two rows) were evaluated for each mix.

With the exception of November, weather during the winter and spring of 1998 was extremely mild. Temperatures in December (+1%), January (+22%), February (+12%) and March (+1%) were above normal (Table 1 and Figure 1). November (-6%) and April (-1%) were below normal. Overall, the seasonal daily average temperature was 49.0, 2% above (1.1 °F above) the 30 year average of 47.9 °F for the same time period.

Precipitation fluctuated during the six month trial with three months well above average, one month with average precipitation, and two months

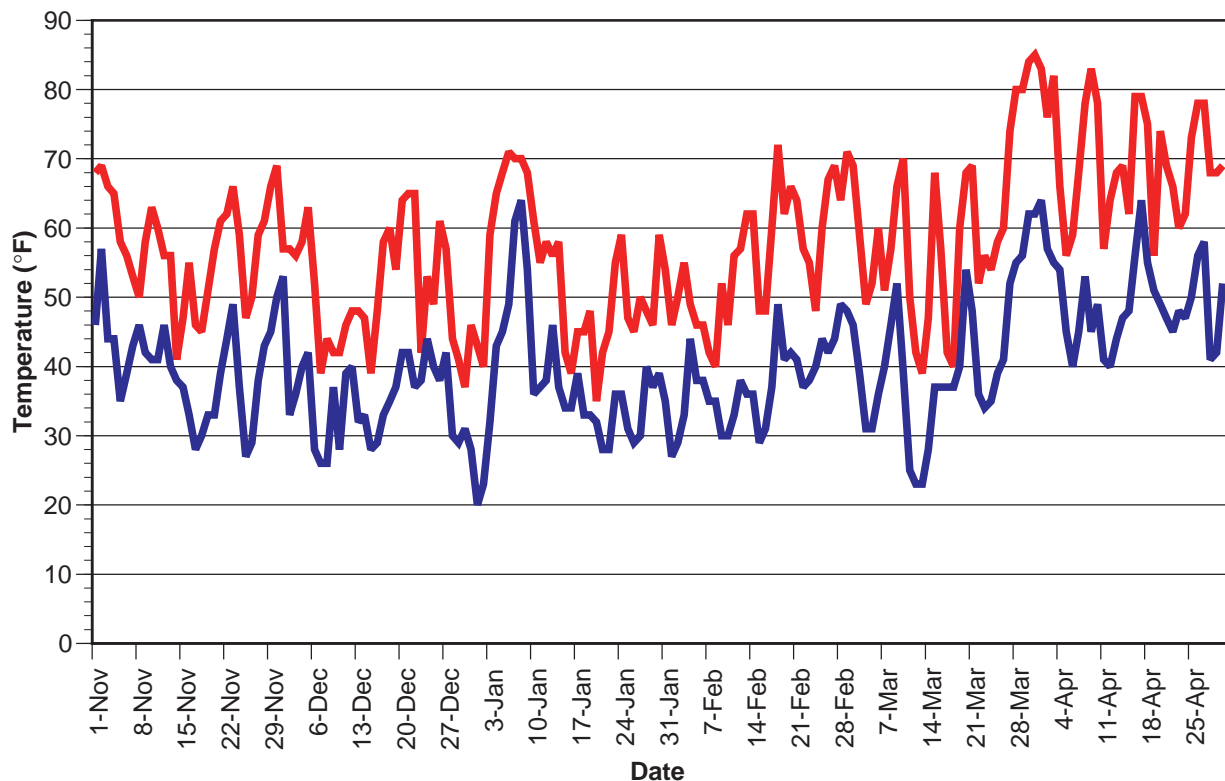


Figure 1. Daily minimum and maximum temperatures for Raleigh, North Carolina from 1 November 1997 to 30 April 1998.

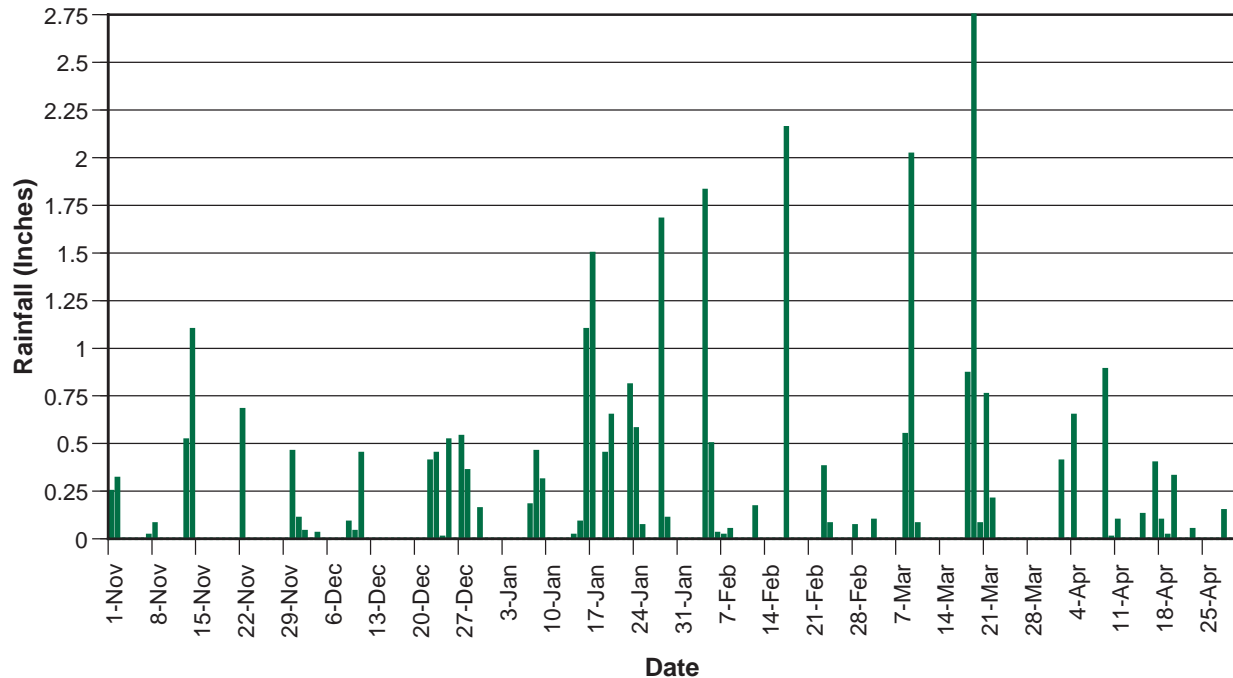


Figure 2. Precipitation received from 1 November 1997 to 30 April 1998.

slightly below average (Table 1 and Figure 2). Overall, we received 30.6 inches of precipitation, which is 40% above our 21.8 inch average precipitation for the six month period. It was an extremely wet winter.

The fertilization program for the plants consisted of a preplant incorporation of 17-17-17

and monthly broadcasts of 15.5-0-0 through March.

No pesticide applications were made during the evaluation in order to document major problems, and no major pest or disease problems were noted at any time during -the trials.

We are indebted to the following companies for supporting our 1997–98 winter trials:

- **BALL** Ball Seed Co., P.O. Box 335, West Chicago, IL 60185
- **BEN** Ernst Benary of America, Inc. 1444 Larson Street, Sycamore, IL 60178
- **BG** Bodger Seeds Ltd., 1800 North Tyler Avenue, Lompoc, CA 91733-3618
- **FN** Floranova, 106 Third Street, San Juan Bautista, CA 95045-1362
- **GOLD** Goldsmith Seeds, Inc., P.O. Box 1349, Gilroy, CA 95020
- **NOV** Novartis Flower Seed Inc., 5300 Katrine Avenue, Downers Grove, IL 60515
- **PA** Pan American Seed, 1017 W. Roosevelt Road, West Chicago, IL 60185
- **SAK** Sakata Seed America, Inc., P.O. Box 158, Wrens, GA 30833
- **WALL** Waller Flowerseed Company, 400 Obispo Street, Guadalupe, CA 93434

*Appreciation is also expressed to **Fafard, Inc.**, P.O. Box 26, Anderson, SC 29622; and to the **North Carolina Commercial Flower Growers' Association** for their donations to and support of the 1997–1998 winter annual trial garden.*

Table 1. Solar energy, temperature and precipitation for November 1997 through April 1998 and 30 year temperature and precipitation averages for Raleigh, N.C.

Month	Daily average solar radiation received (Langley's/day)	Daily average temperature (°F) and percent change from 30 year avg	30 year average daily temperature (°F)	Monthly precipitation (inches) and percent change from 30 year avg	30 year average monthly precipitation (inches)
November	236	48.6 (-6%)	51.7	3.43 (+1%)	3.40
December	186	43.2 (+1%)	42.9	3.21 (-4%)	3.34
January	178	45.2 (+12%)	40.2	8.01 (+111%)	3.79
February	250	46.3 (+10%)	42.1	5.29 (+41%)	3.75
March	366	50.6 (+1%)	50.1	7.42 (+77%)	4.19
April	429	59.9 (-1%)	60.4	3.24 (-4%)	3.36

Leaders of the Pack

The following were selected in 1998 on their ability to survive our tragically wet winter this year. "Leaders of the Pack" were selected for consistent, dependable full-season performance as a source of color and beauty in the landscape.

Pansies:

White--Blotch: 'Rally White Blotch Improved' (BALL), 'Skyline White' (S&G), 'Fama Dark-Eyed White' (BEN), 'Accord/Banner White Blotch' (GOLD)

Yellow--Clear: 'Baby Bingo Yellow' (BALL), 'Clear Sky Primrose' (S&G), 'Accord/Banner Clear Primrose' (GOLD)

Yellow--Blotch: 'Fama Dark-Eyed Lemon' (BEN), 'Delta Primrose w/ Blotch' (S&G), 'Skyline Yellow' (S&G), 'Universal Plus Yellow Blotch' (GOLD), 'Rally Yellow w/ Blotch' (GOLD), 'Rally Yellow w/ Blotch' (BALL), 'Happy Face Yellow' (BG), 'Majestic Giants Yellow w/ Blotch' (SAK)

Rose--Blotch: 'Accord/Banner Rose Blotch' (GOLD), 'Majestic Giants Rose Shades' (SAK)

Red--Clear: 'Delta Pure Red' (S&G)

Red--Blotch: 'Accord/Banner Red Blotch'

(GOLD), 'Skyline Red' (S&G)

Red / Yellow: 'Accord/Banner Red Wing' (GOLD)

Blue--Clear: 'Baby Bingo Denim' (BALL), 'Rally True Blue' (BALL), 'Fama Silver Blue' (BEN), 'Accord/Banner Clear Blue' (GOLD), 'Clear Sky True Blue' (S&G), 'Atlas Blue Splash' (BG)

Blue--Blotch: 'Rally Light Blue w/ Blotch' (BALL), 'Rally Deep Blue w/ Blotch' (BALL), 'Bingo Blue w/ Blotch' (BALL), 'Happy Face Blue' (BG), 'Delta Blue w/ Blotch' (S&G), 'Accord/Banner Blue Blotch' (GOLD), 'Super Majestic Giants Ocean' (SAK), 'Super Majestic Giants Blue Cap' (SAK), 'Majestic Giants Blue Shades' (SAK)

Purple--Clear: 'Baby Bingo Midnight' (BALL), 'Fama Purple' (BEN), 'Universal Plus Lavender' (GOLD), 'Ultima Lavender Shades' (SAK)

Purple--Blotch: 'Rally Lilac Cap' (BALL)

Purple / White: 'Baby Bingo Beaconsfield' (BALL)

Black--Clear: 'Clear Black' (PA), 'Springtime Black' (FN)

Violas: 'Penny Violet Flare' (GOLD), 'Penny Azure Wing' (GOLD), 'Penny Primrose' (GOLD), 'Penny Violet Beacon' (GOLD)

Exceptional Performance Winners

Each year, the best of the best, those cultivars that exemplify outstanding performance during the trials, will be recognized as Exceptional Performance award winners. The winners are judged on full-season performance and are recommended as outstanding selections for our region. Growers, retailers and landscapers are encouraged to consider these cultivars first for their winter and spring color needs. Only three cultivars were selected from 185 entries in the 1997–1998 winter trial:

- Viola, 'Sorbet Blue Heaven' (WALL)**
- Viola, 'Alpine Summer' (NOV)**
- Viola, 'Penny Blue' (GOLD)**

Seasonal Ratings and Performance

The season average ratings for the pansy and viola series that had at least three entries are listed (Table 2) in alphabetical order. Skyline, Fanfare, and Baby Bingo werethe top performing pansy series in the 1997 / 1998 winter trials. However, there was very little difference among any of the pansy series with respect to seasonal average. There were distinct differences in number of weeks with 50% or more of the plants in flower (total of 21 weeks of evaluations). The excessive rainfall we encountered this winter severely affected plant performance, as compared to previous years. For example,

in the 1995 / 1996 trials, pansies averaged a rating of 3.1 and 18 out of 26 weeks of flowering. In the 1996 / 1997 trials they averaged 3.1 and 17 out of 22 weeks of flowering. Since full season flowering is such an important landscape performance feature, we have summarized average number of weeks with 50% or more of the plants in flower by flower color and type in Table 3. The clear white, clear rose, and clear blue cultivars flowered longer than average while for the second year in a row, the blotched orange cultivars were the least floriferous in the trials. Within a given color, there appears to be little difference between

Table 2. Series average ratings for the 1997 / 1998 winter trials.

Series	Number trialed	Source	Avg. rating	No. wks with ≥50% plants in bloom*
Pansy				
Accord	8	GOLD	2.1	14
Atlas	7	BG	2.1	14
Baby Bingo	6	BALL	2.3	16
Bingo	10	BALL	2.1	11
Crystal Bowl	5	PA	2.2	16
Delta	8	NOV	2.1	16
Fama	17	BEN	2.1	14
Fanfare	6	FN	2.3	14
Glory	5	BG	2.0	13
Happy Face	7	BG	2.0	10
Majestic Giants	4	SAK	2.0	12
Maxim	8	PA	2.1	13
Rally	11	PA	2.1	10
Regal	9	SAK	2.1	14
Skyline	4	NOV	2.3	14
Springtime	11	FN	2.2	11
Universal Plus	8	GOLD	2.2	16
All Pansies	152	---	2.1	13.5
Viola				
Alpine	5	NOV	2.9	12
Penny	6	GOLD	2.8	19
Princess	5	BALL	2.7	14
Sorbet	3	WALL	2.8	17
Splendid	3	SAK	2.7	11
Velour	6	FN	2.6	19
All Violas	31	---	2.7	16

*Total of 21 weeks of evaluations.

clear and blotched flowers with the exception of orange, where clear cultivars flowered longer than blotched cultivars. This information may be useful to landscapers seeking to select color schemes that maintain color throughout the winter bedding plant season.

All of the viola series tested outperformed the pansy series. Alpine was the highest rated viola series even though plants did not start to bloom until mid-winter. Violas tend to begin flowering earlier and flower longer in our trials than pansies. They definitely add to the winter palette of bedding plants.

The two English daisy entries survived the winter, but both only averaged 1.5 for the season. This was a relatively mild winter temperature-wise, so they may not be well suited for our area.

The number of pansies and violas continues to increase each year, and the quality appears to improve as well. However, there is still a need for contrasting plant materials during our cool season in the Southeast. Hopefully other companion plants will be discovered in the future.

(The entire trial report including weekly evaluations of each cultivar is available on the NC State Floriculture web site at www2.ncsu.edu/floriculture/

If you do not have access to the internet and would like a copy of the full report, contact Brian Whipker at 919.515.5374 and request Horticulture Research Series No. 131.)

Table 3. Seasonal average rating for each color-type combination.

Color--Type	No. of cultivars	Avg. rating	No. wks with \geq 50% plants in bloom*
Pansy			
White--all	18	2.2	14
White--clear	6	2.0	16
White--blotch	12	2.2	14
Yellow--all	28	2.2	14
Yellow--clear	10	2.2	14
Yellow--blotch	18	2.1	14
Orange--all	9	1.9	11
Orange--clear	6	2.0	13
Orange--blotch	3	1.8	7
Rose--all	9	2.1	12
Rose--clear	1	2.2	15
Rose--blotch	8	2.1	12
Red--all	13	2.1	13
Red--clear	3	2.2	13
Red--blotch	10	2.1	13
Blue--all	35	2.2	14
Blue--clear	12	2.2	16
Blue--blotch	23	2.2	13
Purple--all	20	2.2	13
Purple--clear	7	2.2	14
Purple--blotch	13	2.3	13
Black	2	2.2	13
Mixes	18	2.1	13
All Pansies	152	2.1	13.5
Viola			
White	2	2.6	12
Yellow	8	2.6	13
Blue	10	2.8	16
Purple	7	2.8	17
Black	1	2.8	20
Mixes	3	2.6	21
All Violas	31	2.7	16

*Total of 21 weeks of evaluations.

NCCFGA NEWS

(We gave Joe this month off here at the Bulletin. On Monday, 8 June 1998 President and Mrs. Stoffregen became the parents of an 8 pound 2 ounce baby boy named John Clifton Stoffregen. John Clifton has a sister, Olivia (4 years old) and a brother, Sam (2 years old). Congratulations to the Stoffregen family!)

This was a banner spring for floriculture in North Carolina. We seemed to have good weather each and every weekend; hopefully your spring season was a success.

Representatives of your Association took time out of their schedule to promote our industry to the legislature in Raleigh this spring. NCCFGA members presented Governor and Mrs. Hunt



Susan Rollins (Fairview Nursery) and Joe Stoffregen (Homewood Nursery) visited the Governor's mansion in April and presented Mrs. Hunt with a wonderful assortment of flowering plants.

with flowering plants during Floriculture Month (April), and Joe Stoffregen represented our industry at the North Carolina Agri-business Council Breakfast in May. Our intent is to educate our lawmakers as to the importance of floriculture in this state.

The Southeast Greenhouse Conference is slated for later this month (it may be history by the time you read this). This event has gained national prominence, and you have probably seen the exposure it gets in the trade magazines.

Without the support and assistance of the individual state associations such as NCCFGA,

the conference would not be possible. Without your support and input, NCCFGA would not be possible. We need your support and assistance in July at the Bedding Plant Field Day. This event includes sessions on poinsettia production as well as talks for landscapers and retailers. The Field Day is also our annual NCCFGA membership meeting where we elect our new board members and officers. Each year, three board members rotate off and we elect three new members (members serve for a three year term). If you are interested in serving or if you have a nomination for the board and/or officer positions, please contact Bonnie at 919.779.4618. Your participation is crucial to our association and we hope each of you will consider getting more involved.

There is no "down time" in our business, but all of us would benefit from scheduled time off. Take some this summer, and come back refreshed; ready to tackle poinsettia season!



Charlie Albertson, Chair of the NC Agriculture Committee meets with Joe Stoffregen during the Agri-business breakfast held in May.

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ADDRESS CORRECTION REQUESTED

TO:



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