



## Greenhouse Trials Of Hybrid Geranium Production

**A.M. Armitage**  
 Dept. of Hort.  
 Univ. of Georgia  
 Athens, Ga. 30602

**C.L. Bethke**  
 W.H. Carlson  
 Dept. of Hort.  
 Michigan State Univ.  
 East Lansing, MI

This year the hybrid geranium trials took on new significance, as data on similar cultivars were recorded at two very different locations in the United States. The well known trials conducted at Michigan State University in previous years (BPI News, July 1979, November, 1980) were joined with trials at the University of Georgia. We received cultivars from Pan-American Seed, Goldsmith Seed, and Sluis and Groot Seed for evaluation.

Twenty cultivars were tested at Michigan State University, while 32 were evaluated at the University of Georgia. This report will present only those 14 cultivars common to both locations; information on other cultivars will be forthcoming in a later issue.

### Evaluation: Common to both locations.

**Vegetative Height:** Height from soil line to uppermost leaves.

**Total Height:** Height from soil line to top of first flower.

**Flower Diameter:** Diameter of individual flowers on inflorescence (flower head).

**Inflorescence diameter:** Diameter of an open flower head.

### RESULTS

#### Within location

The reasons for a grower selecting a particular cultivar are numerous. Height makes a difference in shipping, and the size of the flower is

also a concern. All of these cultivars and many more were of high quality, and there were none which we would consider unmarketable. There was a high level of consistency among cultivars grown in any one area. Colors and time to flower have always been important considerations in hybrid geranium culture, and

Table 1: Pack Trials for Geraniums

Cultivar	Source <sup>1</sup>	Total Height		Flower Diam.		Infl. Diam.		Days to Flower	
		UGA	MSU	UGA	MSU	UGA	MSU	UGA	MSU
<u>White</u>									
White Orbit	GS	24.9	22.3	3.6	4.1	7.8	8.1	96	105
Sprinter White	GS	31.4	27.0	4.2	4.6	9.2	9.7	95	104
Ice Queen	SG	34.5	25.3	3.8	4.3	9.9	9.5	92	106
<u>Salmon-Pink</u>									
Sprinter Salmon	SG	30.5	24.7	4.3	4.5	8.2	9.6	94	110
Cherie 80	SG	28.7	22.7	3.5	3.9	8.7	9.6	99	115
Coral Orbit	GS	22.6	20.0	3.6	3.8	8.2	8.0	94	106
Appleblossom Orbit	GS	29.4	24.3	3.7	4.1	9.7	9.7	96	106
<u>Red</u>									
Red Elite	GS	21.4	21.7	3.8	4.5	8.2	9.2	92	102
Red Orbit	GS	27.1	26.0	3.4	4.1	8.5	9.7	96	107
Scarlet Orbit	GS	26.4	27.7	3.7	4.0	8.7	8.3	95	102
Ringo Scarlet	SG	30.6	21.0	3.8	4.6	8.3	8.2	93	103
Sooner Red	PA	27.5	20.7	3.6	4.0	9.7	8.3	96	104
Sprinter Scarlet	GS	31.6	23.7	4.2	4.3	8.5	8.9	98	105
<u>Violet</u>									
Merlin	GS	30.1	28.3	3.4	4.2	9.3	10.1	97	108

<sup>1</sup>GS = Goldsmith Seed, Gilroy, CA; PA = Pan-American Seed, Chicago, IL; SG = Sluis & Groot Seed, Netherlands.

### Production Dates and Program

	Univ. of Georgia	Michigan State Univ.
Sowing	1/29	2/3
Transplanting	1/27	2/14
Cycocel (1500 ppm)	35, 42 days	35 days
First Flower	4/15	5/5
Fertility Program (CLF)	200 ppm N, 15-15-15	200 ppm N, 20-20-20
Media	Peat-Lite	Peat-Lite
Temperatures	62° N/80°+ D	62° N/70°+ D
Spacing	18 pl/flat	18 pl/flat
No. of flats	3/cv	3/cv

these data are presented in Table 1 for comparison.

### Between locations

Some interesting differences were noted for cultivars grown at different latitudes. In general, geraniums grown in the South were taller; and, in some cases, the differences were appreciable (e.g., "Ice Queen" and "Ringo Scarlet" were much taller in the South than in the North. However, many of the differences in height were less than 5 cm (2") and would be of little concern. It is interesting to note that

only one application of cycocel was used at MSU compared with two at UGA, but plants at MSU were still smaller. The difference in height is probably due to higher temperatures, which cause plant stretch. Had only one application of growth retardant been used at UGA, plants would probably have been too tall. Some of the more vigorous cultivars such as "Ice Queen" and the "Marathon" series may require extra applications of Cycocel.

In all instances, flower diameter was smaller on plants grown in the South than on those grown in the North. "Red Orbit," "Red Elite" and "Merlin" were much reduced, while differences were not appreciable for many others. The average decrease was .37 cm (.1 in). Inflorescence diameter of many cultivars was also reduced in the South, but this was not a consistent trend. "Sprinter Salmon," "Red Elite" and "Red Orbit" had the greatest reductions. However, most cultivars showed very small reductions or were larger under Georgia conditions (e.g., "Sooner Red," "Scarlet Orbit," "Ice Queen"). Those cultivars that showed appreciable reduction in inflorescence diameter were probably more sensitive to heat buildup than others, since decreased flower and inflorescence size are known to be caused by high temperatures.

The number of days to flower in hybrid geraniums is affected by light levels and temperature. Increased light leads to faster initiation of the flower, while higher temperatures cause faster development of the bud to open flower. All cultivars flowered earlier under southern conditions, and differences ranged from 7 ("Scarlet Orbit") to 17 ("Cherie") days earlier. Most cultivars were approximately 10 days earlier. Light was higher and temperatures were warmer in the southern greenhouse, so flowering was accelerated.

#### **PUBLICATIONS COMMITTEE**

The BPI News is published monthly by Bedding Plants, Inc. as a service to its members by the Publications Committee of BPI.

Chairman: Nancy L. Jacks

Vice Chairman: Abe Buntsma

Gale Arent	Terry Humfeld
Allan Armitage	Frances Johnson
Lou Berninger	Jane Lieberth
Henry Clay	Dan Milaeger
Doug Crater	R.E. Miller, Sr.
Elwood Cumbo	Ann Reilly
John DeWinter	Edward Rowley
Mary Ann Ford	Joel Schrock
Ralph Freeman	Ray Sheldrake
Victor Fruehauf	Mel Tessene
Sam Fujimoto	Berl Thomas
Ken Goldsberry	Virginia Thomas
Harold Good	Duane Thompson
Dale Grimm	Benny Tjia
John Holden	Alvi Voigt
John Hughes	

Copy & Layout - Kathy Miller

Managing Editor - Marcia Voigt

Editor - William H. Carlson

Michigan State University

These data point out the effect of the environment on the growth and flowering response of hybrid geraniums. They give growers from northern as well as southern areas the information needed to help them sort out the myriad of cultivars available to them.

All of the cultivars in this study and more have been planted outside for garden evaluation. All geranium cultivars looked very good in the greenhouse, but their garden performance is of paramount importance. New cultivars for the South are being bred ("Tara," "Capri" series - Pan-Am), and the potential for hybrid geraniums is still bright. Every year a higher percentage of grower respondents list hybrid geraniums as excellent or good items in their program (1975 - 41%, 1980 - 67%). The vigorous breeding programs, objective evaluations, and vigorous research will allow hybrid geraniums to prosper in all parts of the country.