
MISSISSIPPI STATE UNIVERSITY GERANIUM TRIALS - 1998

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Eighty cultivars of geraniums were grown at the main campus of Mississippi State University to examine the performance of the cultivars in the mid south region. Thirty cultivars were obtained from Ball FloraPlant, thirty cultivars from Fischer USA, thirteen cultivars from Goldsmith, and seven cultivars from Oglevee.

As the rooted cuttings arrived from different vendors, they were potted into 6 inch diameter azalea pots in Sunshine Mix 1 (Sun Gro Horticulture, Bellevue, WA). All cuttings were drenched with a fungicide (Subdue at 1 oz/100 gallons) after potting. Plants received a Subdue fungicide drench monthly until planting outside. During greenhouse production all plants received a continuous liquid feed of 150 mg L^{-1} N for the first 6 weeks and then at 200 mg L^{-1} N from 15-15-15 (N-P₂O₅-K₂O) Peters Geranium Special (The Scotts Co., Marysville, OH) until the plants were planted outside. The plants all received a Florel treatment at 350 mg L^{-1} two weeks after potting. Plants were then manually disbudded until April 6, 1998. On May 5, 1998, the plants were transplanted 3 plants to a 14" diameter container and placed outside in a full sun location on a gravel nursery production slab. Each cultivar had 3 replications. The containers were watered using drip irrigation for 20 minutes every other day throughout the summer. Each container of plants received 78g of Osmocote 15-11-13 (N-P₂O₅-K₂O) (The Scotts Co., Marysville, OH) when first planted and again in late July. In July the plants had exhibited extreme chlorosis and were treated with chelated iron at 8 oz./100 gallons and 20 oz/100 gallons of magnesium sulfate. Plants were deadheaded monthly while grown outdoors.

Data was collected twice in the summer to determine the extent of the chlorosis and to evaluate plant form. Chlorosis was rated on a visual scale as follows: 1) almost entire plant chlorotic or bleached white, 2) about 75% of the plant chlorotic, 3) about 50% of the plant chlorotic, 4) about 25% of the plant chlorotic, 5) no visible chlorosis. Plant form and growth was also evaluated on a visual scale of 1 to 5 as follows: 1) plants almost dead or dead, no flowers; 2) soil visible in the container around the plants, little canopy cover, reduced flowering; 3) good canopy cover but plants not larger than the diameter of the container, average flower cover; 4) plants larger than the diameter of the container and showing good general form, very floriferous; 5) plants growing vigorously, they were larger than the container, and the was container hidden by the plants, very floriferous.

CONCLUSIONS

The plants were left to grow until killed by a freeze. In 1998 that freeze did not occur until late December. After our first frost November 5th, the flowers that were open died but were soon replaced by those that were still developing. The plants showed good color until late November. Flowering decreased as the temperatures decreased in the fall. In general the ivy types performed far better than most people were predicting even surpassing the performance of many of the zonals.

A few notes/impressions of some of the cultivars in the trials follow:

Amethyst - Although it showed considerable iron chlorosis in the summer heat, it recovered

well. In August it was the only cultivar, ivy or zonal, rated as having the best color and best plant form.

- Barock '96 - Performed well in early summer but did not hold up in the summer heat.
- Taj Mahal - Color was a dark, lustrous purple in greenhouse production that faded to a lighter, but still dark, purple in the summer heat. Plants held up well in the heat.
- Blizzard series - All except the Red Blizzard were very vigorous in early summer. Pink Blizzard performed the best of the series.
- Atlantis '96 - Excellent plant form in late summer. Showed minimal chlorosis.
- Bravo Light Pink - Excellent form but had considerable chlorosis.
- Calypso - Grew similar to Bravo Light Pink and also had problems with iron chlorosis.
- Charmant - Did not grow well in the summer heat of Mississippi.
- Tango series - All were fairly vigorous growers that had very good plant form and average chlorosis problems.
- Designer Bright Scarlet - Good, vigorous plant. Suffered early in the summer but recovered well after receiving additional iron.
- Designer Grape - This cultivar had great color blooms but did not grow well in the heat. It was almost dead by the end of summer.
- Fantasia Coral - Exhibited little iron chlorosis in mid summer.
- Fantasia Flame - Although it suffered greatly from iron chlorosis in mid summer, it recovered well and was highly rated for plant form in late August.
- Fantasia Flamingo Rose - Suffered little from iron chlorosis and was highly rated for plant form.
- Showcase series - With the exception of Bright Coral Imp. and White, the Showcase series produced containers with reasonably good coverage and average chlorosis ratings of above 3.
- Colorcade series - Despite one of the hotter, drier summers on record this series performed very well in the summer heat.
- Galleria series - Galleria SnowFire was the only one of the three trialed that thrived in the heat. The other two cultivars barely limped along.
- Patriot Light Pink - This cultivar grew vigorously and filled the containers very well.
- Peaches - A great peach color on a vigorous plant. Kept flowering most of the summer.
- Sincerely Yours - Grew very well in the greenhouse but did not hold up to the late summer heat. It tended to slow flowering and loose leaves in August.
- Americana series - With the exception of Rose Splash and White Splash, the cultivars in this series were average to above average in tolerating the heat.
- Americana Deep Rose - Suffered from iron chlorosis in July but recovered well in the heat of August.
- Americana Light Pink - This cultivar did not suffer as much from iron chlorosis in July but declined some in August even after receiving additional iron. It did have excellent plant form.
- Americana Light Pink Splash - This cultivar performed better than the other two splash types. It showed little chlorosis in July but declined in August.
- Eclipse Cherry - This cultivar almost died in early summer but after treating with iron and magnesium it recovered very well in the heat of the summer.

Table 1: Geranium Trials - 1998. Results of visual ratings for leaf greenness and general plant form. Plants were rated on a scale of 1 to 5.

		July 24, 1998		August 20, 1998	
		Chlorosis	Form	Chlorosis	Form
Fischer					
Amethyst	Ivy	3.7	3.3	5.0	5.0
Barock '96	Ivy	1.0	3.7	1.0	1.0
Beach	Ivy	1.7	4.0	2.7	2.0
Butterfly	Ivy	1.7	4.7	2.7	3.0
Lambada '98	Ivy	1.7	4.0	4.3	3.3
Luna '98	Ivy	2.7	4.3	4.3	4.7
Molina	Ivy	2.7	5.0	3.3	3.7
Taj Mahal	Ivy	2.7	5.0	4.7	4.7
Blue Blizzard	Ivy/Cascade	4.0	5.0	4.0	3.0
Pink Blizzard	Ivy/Cascade	2.3	5.0	4.7	4.0
Red Blizzard	Ivy/Cascade	1.0	3.3	1.3	1.7
White Blizzard	Ivy/Cascade	3.7	4.7	4.0	3.7
Atlantis '96	Zonal	3.0	3.7	4.0	5.0
Bravo	Zonal	3.0	3.0	3.0	3.3
Bravo Light Pink	Zonal	3.0	3.0	3.7	5.0
Calypso	Zonal	3.7	3.7	3.3	5.0
Charmant	Zonal	2.0	3.0	2.7	1.7
Diabolo '98	Zonal	2.7	3.0	3.3	4.0
Disco '98	Zonal	3.7	4.7	3.0	3.7
Helena '98	Zonal	3.3	3.0	2.7	1.3
Lotus	Zonal	3.3	4.3	4.3	3.7
Magic	Zonal	3.0	3.3	3.7	1.3
Montevideo	Zonal	3.7	3.7	4.0	4.3
Samba	Zonal	3.3	4.3	3.0	3.3
Schoene Helena	Zonal	4.3	4.3	4.0	4.3
Tango	Zonal	2.3	4.3	4.0	4.7
Tango Dark Red	Zonal	3.7	4.0	3.7	4.3
Tango Violet	Zonal	4.3	4.3	3.7	4.7
Tiffany '96	Zonal	3.3	2.7	2.3	2.7
Vulkan '98	Zonal	3.0	3.7	3.0	3.7
Ball FloraPlant					
Designer Bright Scarlet	Zonal	3.3	2.0	4.0	5.0
Designer Bright Lilac Imp.	Zonal	3.0	4.0	3.7	4.3
Designer Dark Red	Zonal	2.3	2.0	3.0	1.7
Designer Grape	Zonal	1.7	1.3	3.0	1.7
Designer Hot Coral	Zonal	4.3	3.7	4.7	4.3
Designer Lilac Chiffon	Zonal	4.7	4.3	4.0	4.7
Designer Purple Rose	Zonal	3.3	2.3	3.3	3.7
Designer Rose	Zonal	2.0	2.0	3.0	3.0
Designer Salmon	Zonal	4.0	3.7	4.3	5.0
Designer Violet	Zonal	2.0	2.0	3.0	2.7
Designer WhiteFire	Zonal	3.0	1.3	3.3	4.0
Fantasia Cardinal Red	Zonal	1.3	2.3	3.3	4.0
Fantasia Coral	Zonal	5.0	3.3	4.0	3.3
Fantasia Flame	Zonal	2.7	4.3	4.0	5.0
Fantasia Flamingo Rose	Zonal	4.7	3.7	4.7	5.0
Fantasia Pink Shell	Zonal	3.3	3.3	4.3	4.3
Fantasia Salmon Mist	Zonal	4.3	2.7	3.3	2.0
Showcase Bright Red	Zonal	4.3	2.0	4.3	4.3

		July 24, 1998		August 20, 1998	
		Chlorosis	Form	Chlorosis	Form
Showcase Bright Coral Imp.	Zonal	3.0	1.0	3.0	2.7
Showcase Light Lavender	Zonal	1.7	3.3	3.7	5.0
Showcase Red	Zonal	3.7	1.0	5.0	3.7
Showcase Scarlet	Zonal	5.0	3.7	4.7	5.0
Showcase White	Zonal	1.0	1.0	2.7	2.0
Coloracade Burgundy	Ivy	3.0	4.7	5.0	4.7
Coloracade Lavender	Ivy	4.3	5.0	4.0	4.7
Coloracade Lilac	Ivy	2.3	3.3	4.0	5.0
Coloracade Pink	Ivy	3.7	4.3	4.7	5.0
Galleria Ruby Red	Ivy	3.3	1.7	2.7	1.3
Galleria SnowFire	Ivy	2.0	4.7	3.3	5.0
Galleria Sunrise	Ivy	1.7	3.7	4.7	2.7
Oglevee Ltd.					
Fireball	Zonal	3.7	4.3	4.0	3.3
Melody Red	Zonal	2.3	4.0	3.0	3.7
Patriot Cherry Rose	Zonal	3.3	4.0	3.7	4.3
Patriot Light Pink	Zonal	3.3	5.0	3.3	4.7
Peaches	Zonal	2.0	3.7	3.3	4.7
Raspberry Ice	Zonal	1.7	4.7	3.3	4.7
Sincerely Yours	Zonal	2.0	5.0	3.0	3.0
Goldsmith Inc.					
Americana Coral	Zonal	1.0	2.7	3.3	3.7
Americana Dark Red	Zonal	3.0	4.0	3.3	4.7
Americana Deep Rose	Zonal	3.0	3.3	4.3	4.7
Americana Light Pink	Zonal	4.3	3.7	4.0	4.7
Americana Light Pink Splash	Zonal	4.3	3.0	4.0	3.7
Americana Light Salmon	Zonal	2.0	3.7	3.3	3.0
Americana New Violet	Zonal	3.0	3.7	3.7	3.7
Americana Pink	Zonal	3.0	2.7	4.0	3.7
Americana Rose Splash	Zonal	1.3	2.7	3.3	1.3
Americana White Splash	Zonal	2.0	3.0	3.0	2.3
Eclipse Cherry	Zonal	3.7	1.3	4.0	4.0
Eclipse Light Lavender	Zonal	2.7	3.7	3.3	3.0
Eclipse Red	Zonal	2.0	2.0	3.3	3.7
LSD _{0.05}		0.9	1.1	0.9	1.1

Geranium Trial - July 1998.

