

'Summer Pink' – A New Pink, Fancy-Leaved Caladium Variety¹

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'Summer Pink' is a new fancy-leaved caladium variety developed by the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) caladium breeding program for use in large containers and shady locations in the landscape (Deng and Harbaugh 2012). Leaves of this variety have a pink face and pink veins (Figure 1). In replicated field and greenhouse trials, 'Summer Pink' performed comparably or better than 'Fannie Munson' and 'White Queen', two pink caladium varieties commonly used in containers and landscapes.

Origin

'Summer Pink' is the progeny of 'Red Flash' and 'Candidum Junior'. 'Red Flash' is a commercial variety known for its plant vigor, excellent performance in large containers and landscapes, large tubers, large plants, and large leaves. 'Candidum Junior' is a commercial variety with an attractive coloration pattern (netted green veins and bright white interveinal areas) and a desirable growth habit in containers. The ancestry of 'Red Flash' and 'Candidum Junior' is unknown.

Leaf and tuber characteristics

'Summer Pink' leaves are heart shaped and have palmate-pinnate venation. On average, mature leaves of 'Summer Pink' plants grown in full sun in ground beds are approximately 11 inches long and 7 inches wide. The upper leaf surface has a yellow-green margin bordering the entire



Figure 1. 'Summer Pink' plants produced by forcing de-eyed No. 1 tubers (1.5–2.5 inches in diameter) in 5-inch square containers (one tuber per container). Tubers were planted in April 2007, plants were grown in a shaded greenhouse, and the photo was taken 9 weeks after planting.

Credits: Richard Kelly (University of Florida)

leaf. The basal leaf valley is red. Primary veins are red near the center and change into mostly gray-purple toward the margin. Secondary veins are red and netted and occur on 50%–80% of the leaf surface. Bands of red bleed along primary and secondary veins. White blotches may appear between secondary veins. The undersurface has a gray-green margin and a few white blotches. Primary veins are red, and secondary veins are gray-green. Interveinal areas vary from red near the center to green near the margin.

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Petioles are gray-red. Numerous brown streaks appear on the lower two-thirds of the petioles.

Jumbo-sized tubers (2.5–3.5 inches in diameter) are multisegmented, bearing three to five dominant buds. Tuber surfaces are brown with patches of gray-orange, and the tuber cortical area is yellow.

Tuber production

'Summer Pink' was evaluated for tuber production at the Gulf Coast Research and Education Center in Wimauma, Florida, in 2006 and 2007. The soil is Eau Gallie fine sand with about 1% organic matter and a pH value between 6.2 and 7.4. In 2006, raised ground beds (32 inches wide and 8 inches high) were fumigated on 30 March with a mixture of 67% methyl bromide and 33% chloropicrin (by volume) at the rate of 175 pounds per acre and covered with white-on-black plastic mulch. Caladium seed pieces (tuber pieces, ~1 inch × ~1 inch × ~1 inch) were planted in the beds on 11 April with approximately 6-inch spacing between rows and in rows. A constant water table was maintained below the beds using a seepage irrigation system (Geraldson, Overman, and Jones 1965). Osmocote®, a controlled-release fertilizer (18N-6P₂O₅-12K₂O, 8–9 month) (Scotts Co., Marysville, OH), was applied to the bed surface when young plants were emerging from the soil at a rate of 300 pounds of nitrogen (N) per acre. Tubers were dug in December 2006. Dried tubers were weighed, counted, and graded. Tuber grading was by maximum diameter: No. 2 (1–1.5 inches), No. 1 (1.5–2.5 inches), Jumbo (2.5–3.5 inches), Mammoth (3.5–4.5 inches), and Super Mammoth (> 4.5 inches). Tuber counts and grades were converted into a production index (PI) to show the relative economic value of the harvested tubers per experimental plot: $PI = n(\text{No. 2}) + 2n(\text{No. 1}) + 4n(\text{Jumbo}) + 6n(\text{Mammoth}) + 8n(\text{Super Mammoth})$; where n = number of tubers in each grade.

In 2007, the field beds were fumigated on 3 April using the same fumigant mixture (175 pounds per acre). Caladium seed pieces were planted on 16 April, with approximately 1 foot between-row spacing and approximately 6-inch in-row spacing. A drip irrigation system was used to provide water (approximately a quarter of an inch per day) and soluble fertilizer (6-4-6; ~1.7 pounds of N per acre per day; 260 pounds of N per acre per season). Tubers were dug in January 2008, followed by drying, weighing, counting, and grading using the same procedure used in the previous growing season.

In both years, experimental plots were arranged in the field following a randomized complete block design consisting of three replications. Each field plot was planted with 30 caladium propagules (seed pieces). 'Fannie Munson' and 'White Queen' were included as check varieties. They were most similar to 'Summer Pink' in color or coloration pattern among commercial pink caladium varieties.

In 2006, 'Summer Pink' tuber weight was 43%–71% greater and PI was 31%–35% higher than that of 'Fannie Munson' and 'White Queen' (Table 1). In 2007, 'Summer Pink', 'Fannie Munson', and 'White Queen' had a similar tuber weight, marketable tuber number, and production index. 'Summer Pink' appeared to produce larger tubers than 'Fannie Munson' and 'White Queen' in 2006, but no significant differences in tuber size distribution were observed among these varieties in 2007.

Container forcing and performance

No. 1 tubers were planted intact or de-eyed in March 2007 in 4.5-inch containers filled with a peat/vermiculite mix (VerGro Container Mix A, Verlite, Tampa, FL). Potted plants were grown on metal benches in a greenhouse with 45% light exclusion in Wimauma, Florida. Temperatures in the greenhouse ranged from 61°F (night) to 85°F (day). The commercial variety 'Kathleen' was included as a check variety because 'Summer Pink' would be marketed in the same leaf color/coloration pattern as 'Kathleen'.

When intact tubers were planted, 'Summer Pink' sprouted in about 31 days, nearly 5 days later than 'Kathleen'. De-eyed tubers of 'Summer Pink' sprouted 13 days later than those of 'Kathleen' (Table 2). Plants from intact 'Summer Pink' tubers were taller and developed fewer but larger leaves than plants of 'Kathleen', resulting in lower plant quality ratings for plants produced in small pots. De-eyed plants of these varieties were similar in height, but leaf number was smaller and leaf size larger for 'Summer Pink' compared to 'Kathleen'. However, plant quality ratings were higher for 'Summer Pink' than 'Kathleen' because of the better leaf color of 'Summer Pink'. 'Summer Pink' plants from de-eyed tubers produced more leaves and leaves were more uniform in size when compared to plants from intact tubers. Tuber de-eyeing improved 'Summer Pink' plant quality considerably.

Landscape performance

Landscape performance under full-sun conditions was evaluated in 2006 and 2007 on the same plots used for evaluating tuber production. The overall plant performance was rated on 2 August and 7 September in the 2006 growing season and on 26 July, 28 August, and 25 September in the 2007 growing season on a scale of 1–5, with 1 being very poor (few leaves and lack of vigor) and 5 being excellent (full plants, numerous leaves, and bright color display). At the same time plant performance was evaluated, leaf sunburn tolerance was rated on a scale of 1–5, with 1 being very susceptible to sunburns and showing numerous sun-damaged areas or holes on leaves and 5 being resistant to sunburns and not showing any sun-damaged areas. At approximately 4 months after planting, plant height, number of leaves, and foliar characteristics were measured.

The average plant height of ‘Summer Pink’ under full sun conditions was 14.4 inches, approximately 3 inches taller than ‘Fannie Munson’ and ‘White Queen’ (Table 3). ‘Summer Pink’ plants produced similar numbers of leaves (14–19) of similar lengths (10–11 inches) and widths (~7 inches) as ‘Fannie Munson’ and ‘White Queen.’ ‘Summer Pink’ performed similarly to ‘Fannie Munson’ and ‘White Queen’ in 2006 and 2007 (Table 3). In full sun, ‘Summer Pink’ leaves did not show leaf tissue damage from sunburns (holes or “windows” on leaf blades), but faded into light pink, especially in July and August when the sunlight level and air temperature were high. ‘Summer Pink’ had lower sun tolerance ratings than ‘White Queen’ and ‘Fannie Munson’ (Table 3). Thus, ‘Summer Pink’ is more suited for partially shady locations in the landscape.

Recommendation

‘Summer Pink’ is a new addition to the pink fancy-leaved variety group and is intended for use in large containers and shady locations in the landscape. ‘Summer Pink’ behaves much like ‘Kathleen’ in container forcing, but a few more days may be needed to produce finished ‘Summer Pink’ plants. Tuber de-eyeing is necessary for producing high-quality plants in containers 4–6 inches in diameter. In terms of tuber production, ‘Summer Pink’ is as good as or better than ‘Fannie Munson’ and ‘White Queen.’

Availability

The Florida Agricultural Experiment Station has applied for a plant patent for ‘Summer Pink’ (UF-48-5). Production of this variety is to be with a licensing agreement with the Florida Foundation Seed Producers, Inc., P.O. Box 309, Greenwood, FL 32443. Information about tuber availability and propagation agreements can be obtained from the Florida Foundation Seed Producers, Inc. (<http://ffsp.net/>).

Literature cited

- Deng, Z., and B. K. Harbaugh. 2012. “‘Summer Pink’ – A New Pink Fancy-Leaved Caladium.” *HortScience* 47 (5): 672–674.
- Geraldson, C. M., A. J. Overman, and J. P. Jones. 1965. “Combination of High Analysis Fertilizers, Plastic Mulch, and Fumigation for Tomato Production on Old Agricultural Land.” *Proc. Soil and Crop Sci. Soc. Fla.* 25: 18–24.

Table 1. Tuber weight, production index, marketable number, and grade distribution of ‘Summer Pink’ and two commercial caladium varieties in 2006 and 2007

Varieties	Tubers			Tuber grade distribution (%)				
	Weight (lb)	Production index	Marketable (no.)	Super Mammoth	Mammoth	Jumbo	No. 1	No. 2
Year: 2006								
Summer Pink	11.7	173	59	0	15	26	50	10
Fannie Munson	6.8	132	55	0	3	28	43	25
White Queen	8.2	128	47	0	3	46	25	25
Year: 2007								
Summer Pink	9.7	117	38	1	15	30	39	16
Fannie Munson	8.4	108	42	1	8	18	55	19
White Queen	10.4	166	51	1	12	42	34	11

Note: Values presented are means of three replications with 30 propagules planted in a plot in the field. The production index is an indicator of the economic value of the tubers harvested and is calculated as follows: n (No. 2) + $2n$ (No. 1) + $4n$ (Jumbo) + $6n$ (Mammoth) + $8n$ (Super Mammoth), where n = number of tubers in each grade. Tubers graded by maximum diameter: No. 2 (1–1.5 inches), No. 1 (1.5–2.5 inches), Jumbo (2.5–3.5 inches), Mammoth (3.5–4.5 inches), and Super Mammoth (> 4.5 inches).

Table 2. Plant performance and quality of 'Summer Pink' and 'Kathleen' grown from No. 1 tubers in 4.5-inch containers in a 45% shaded glasshouse in Wimauma, Florida, in 2007.

Variety	Days to sprout		Plant height (inch)		Leaves (no.)		Leaf length (inch)		Leaf width (inch)		Quality rating	
	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed
Summer Pink	31	36	12.4	10.9	6	12	13.3	9.2	9.3	5.9	2.4	4.4
Kathleen	26	23	9.5	9.3	14	20	7.5	5.9	4.7	3.4	3.2	3.6

Note: Values represent the means of eight plants produced from intact or de-eyed No. 1 tubers planted individually per container. Data were taken 8 weeks after planting. Number of days from planting to the first unfurled leaf. Plant quality was rated on a scale of 1–5, with 1 being very poor, 3 being fair and acceptable, and 5 being excellent in plant vigor, fullness, and color display as pot plants.

Table 3. Plant characteristics, performance, and sunburn tolerance of 'Summer Pink' and two commercial varieties in 2006 and 2007^z

Variety	Plant height (inch)		Leaf ^f		Overall plant performance ratings [*]						Sun tolerance rating ^w			
	Number	Length (inch)	Width (inch)	Length (inch)	08/06	09/06	07/07	08/07	09/07	08/06	09/06	07/07	08/07	09/07
Summer Pink	19	11.2	7.0	11.2	2.7	3.8	3.1	3.7	4.4	3	3.9	1.8	2.4	3.9
Fannie Munson	16	10.3	6.7	10.3	1.7	2.5	2.1	2.7	3.5	3.3	4.1	3.3	3.9	4
White Queen	14	9.8	7.0	9.8	1	1.2	3.3	3.5	3.6	3.8	4.3	3.5	4.8	4.6

^zPlants were grown from 1-inch tuber propagules in ground beds in full sun in Wimauma, Florida. Values presented for plant height, leaf number, length, and width are means of three replications with three plants measured per plot per year, while performance and sunburn tolerance ratings are means of three replications based on whole plot evaluation.

^yData were taken over two growing seasons (2006 and 2007), approximately 4 months after tubers were planted in April each year.

^xPlants were rated on a scale of 1–5, with 1 being very poor, 3 being fair and acceptable, and 5 being excellent in plant vigor, fullness, and color display, in August and September 2006 and July, August, and September 2007.

^wPlant sunburn tolerance was rated on a scale of 1–5, with 1 being very poor, 3 being fair and acceptable, and 5 being excellent without showing any signs of leaf burns or resulting holes on leaf surfaces, in August and September 2006 and July, August, and September 2007.