

'Summer Rose' Caladium - a University of Florida Cultivar for Containers and Landscapes¹

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Cultivated caladiums (*Caladium xhortulanum*) are known for their bright, colorful leaves and ease in growing and are used widely in containers, hanging baskets, and landscapes (Wilfret, 1993). Commercial caladium plants are grown from tubers. Over 95% of the caladium tubers used in the world are produced in Florida.

The predominant leaf colors exhibited in caladium are white, red, and pink. According to a 2003 survey, pink fancy-leaved cultivars represented 25% of the tuber producing industry (Deng et al., 2005). 'Rosebud' is ranked fourth for acreage grown (11% of total acreage) among the pink fancy-leaved cultivars. This cultivar is well liked for its unique pattern of bright pink color. However, tuber yield in 'Rosebud' has been rather low and tuber production has been rather costly, due to a disorder called "grassy tuber." This disease results in diminutive plants with many small leaves and reduction of tuber size and yield (Polston et al., 1991). Tuber producers have to manage this disorder by rouging symptomatic plants manually. For many tuber producers, costs of rouging and reduced yields make production of 'Rosebud' unattractive economically and a replacement cultivar would be welcome.

'Summer Rose' is similar to 'Rosebud' in color and container-performance, except that de-eyed tubers sprout several days earlier and petioles are red-purple at the leaf attachment and gradually darken to brown at the petiole base. Tuber production and field performance of 'Summer Rose' were better than 'Rosebud', adding another benefit to both tuber producers and landscapers. 'Summer Rose' would make a good replacement for tuber producers desiring a new cultivar to replace 'Rosebud'.

Origin

'Summer Rose' was derived from a cross between 'Aaron' and a seedling, S-25, which was from a cross of 'Fire Chief' x 'Torchy'. 'Aaron' was selected as the female parent for its large leaves and tubers. 'Fire Chief' and 'Torchy' were selected for their vivid red veins and interveinal areas. Ancestry of 'Aaron', 'Fire Chief' and 'Torchy' are unknown.

Description

Jumbo tubers of 'Summer Rose' are multi-segmented, usually bearing three to four dominant buds. Tuber surfaces are brown with the cortical area very light yellow.

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Leaves are peltate, sagittate-cordate, with palmate-pinnate venation. The center veins are red-purple. The upper surface has an irregular dark green irregular margin bordering the entire leaf, except for the basal leaf sinus, where it is grayed-purple. Intervinal areas in the center of the leaf are red-purple, but this is bordered by a green-white speckling on a green background. Petioles are red-purple at the leaf attachment and gradually darken to brown at the petiole base.

'Summer Rose' plants grown from 1-inch tuber propagules for about 4 months in full sun in ground beds had an average height of 20 inches. Their leaves averaged 12 inches long and 8 inches wide, larger than 'Rosebud', which had leaves 9 inches long and 6 inches wide. The largest leaves on plants grown in a 50% shaded greenhouse produced from an intact, number-one tuber in a 5-inch pot averaged 10 inches long and 8 inches wide 7 weeks after planting. This size was very similar to other pink cultivars tested.

Tuber Production

'Summer Rose' was evaluated for tuber production at the GCREC–Bradenton, Fla., during 2003 and at the GCREC–Dover, Fla., in 2004. The soil in Bradenton was an EauGallie fine sand with 1% organic matter and a pH of 6.2, and the soil in Dover was a Seffner fine sand with 1% organic matter and a pH of 6.5. Plants were grown in a plastic-mulched raised-bed system. The beds were 36 inches wide and 8 inches high with 1-inch caladium seed pieces planted 6 inches apart in three rows (Bradenton) or 12 inches apart in two rows (Dover). Osmocote 18N–2.6P–10K 8- to 9-month controlled-release fertilizer was applied to the bed surface when shoot tips were emerging from the soil with N at 300 pounds per acre.

Candidum was grown on 120 acres in a 2003 survey and was among the top two caladium cultivars ranked based on production acreage (Deng et al., 2005). 'Summer Rose' tuber production was excellent with tuber weights nearly 1.3 and 1.6 times higher than 'Candidum' in 2003 and 2004, respectively. Also, its production index (an economic indicator of crop value) was greater than 'Candidum' in both years (1.3 or 1.4 times greater). Similarly,

'Summer Rose' had higher yields than 'Rosebud' as seen in tuber weight (1.3 and 1.8 times higher) and production index (1.2 and 1.3 time higher) measurements. Although 'Summer Rose' did not have the greatest number of marketable tubers, it produced 40 tubers from 30 chips and had as many tubers as or more than other cultivars tested. There was also a greater percentage of tubers in the mammoth and jumbo grades compared to 'Rosebud' and 'Carolyn Whorton', and these grades have a high market value.

Container Forcing

'Summer Rose' tubers were forced in 4 1/2-inch containers and its growth compared to three pink-fancy commercial cultivars. No. 1 tubers were planted in a peat/vermiculite mix (Vergro Container Mix A) on 24 June 2002. The study was conducted in a glasshouse with 50% light exclusion during the summer in Bradenton, Fla. Average daily temperatures ranged from a low of 70°F night to 85°F in the day during the experiment. Plant performance of 'Summer Rose' in containers was similar to plant performance of the other cultivars tested. Noticeable differences included fewer days to sprout for 'Summer Rose' than 'Rosebud' for de-eyed tubers, and greater plant height for de-eyed 'Summer Rose'. Since 'Rosebud' is known as an excellent pot plant, these results indicate 'Summer Rose' also has potential for use as a potted/container plant.

Landscape Performance

'Summer Rose' and several commercial cultivars were grown under full-sun conditions in 2003 and 2004. Plant height, number of leaves, and foliar characteristics were recorded about 4 months after planting. 'Summer Rose' was taller with larger leaves than 'Rosebud' but similar in height and leaf size to 'Candidum' and 'Carolyn Whorton'. It had excellent performance ratings all through the growing season.

Summary

In summary, 'Summer Rose' is intended for use in containers and the landscape. It should perform well in partial shade or full sun conditions. Although extensive research and evaluations of this cultivar



Figure 1. 'Summer Rose' forced in a 4-inch-container using one No. 1 tuber. Credits: University of Florida/IFAS Gulf Coast REC



Figure 2. Plants of 'Summer Rose' in a landscaped area. Credits: University of Florida/IFAS Gulf Coast REC

have been performed on small acreages, tuber producers are encouraged to plant only limited quantities of 'Summer Rose' until they have gained experience in producing this cultivar. Standard postharvest treatment of tubers is recommended (Harbaugh and Tjia, 1985) and preplant hot-water treatment of tubers is encouraged to prolong their life.

Availability

A patent is applied for for 'Summer Rose' by the Florida Agricultural Experiment Station, and production of this cultivar is to be with a licensing agreement with the Florida Foundation Seed Producers, Inc., P.O. Box 309, Greenwood, FL 32443. Information on tuber availability and propagation agreements can be obtained from the Florida Foundation Seed Producers, Inc.

Literature Cited

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Table 1. Performance of plants grown from 2.54-cm tuber propagules in ground beds under full sun.

Cultivar	Plant ht ^z (cm)	Leaves ^z (number)	Leaf ^z		Overall plant performance ^y		
			Length	Width	Early	Middle	Late
			(cm)	(cm)			
Candidum	46	13	28	18	3.3	3.7	3.5
Carolyn Whorton	48	16	33	22	3.0	4.6	4.5
Rosebud	42	20	23	16	2.5	3.2	2.0
Summer Rose	52	17	31	21	4.5	4.5	4.5
LSD ($\alpha = 0.05$)	8.2	5.3	2.2	1.6	1.0	0.7	0.1

^z Values presented are means of three replications with three plants measured per plot per year, averaged over 2 years (2003 and 2004).

^y Overall plant performance was rated July 22 (early), August 31 (mid), and November 16 (late), 2004.

Table 2. Plant performance for caladium cultivars grown from No. 1 tubers planted 24 June, 2002, in 10-cm containers in a 50% shaded glasshouse, Bradenton, FL. Values represent the means of five plants produced from intact or de-eyed No. 1 (3.8-to 6.4-cm-diameter) tubers planted individually per container.

Cultivar	Days to sprout ^z		Plant ht (cm)		Leaves (no.)		Leaf length (cm)		Leaf width (cm)		
	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed	Intact	De-eyed	
Calypso	14	13	39	40	11	19	25	20	18	14	
Carolyn Whorton	20	18	43	41	10	14	27	21	18	14	
Rosebud	20	23	38	32	12	19	24	17	13	13	
Summer Rose	18	17	36	39	9	22	25	21	19	16	
LSD ($\alpha = 0.05$)	4.5	4.4	ns	4.5	ns	4.5	ns	ns	ns	ns	ns

^z Number of days from planting to the first unfurled leaf.

Table 3. Tuber weights, production index, and tuber grade distribution of caladium cultivars harvested in 2003 and 2004.

Cultivar	Tuber			Tuber distribution ^y (%)				
	Weight (g)	Production ^z index	Marketable (number)	Super mammoth	Mammoth	Jumbo	No. 1	No. 2
Year 2003								
Candidum	2784	98	33	1	12	30	43	14
Carolyn Whorton	2879	101	39	0	9	28	40	24
Rosebud	2632	109	45	0	4	24	45	27
Summer Rose	3519	126	40	0	8	47	40	5
LSD ($\alpha = 0.05$)	306	25	13	2	13	19	26	17
Year 2004								
Candidum	2860	96	35	2	6	27	54	12
Carolyn Whorton	4268	132	53	0	9	20	45	26
Rosebud	2553	102	49	0	2	18	47	33
Summer Rose	4597	132	40	0	15	42	32	12
LSD ($\alpha = 0.05$)	531	15	9	2	9	16	21	14
^z The production index is an indicator of economic value of the crop harvested and is calculated as $N(\text{No. 2s}) + 2N(\text{No. 1s}) + 4N(\text{Jumbos}) + 6N(\text{Mammoth}) + 8N(\text{Super Mammoth})$; where N = number of tubers in each grade. ^y Tubers graded by maximum diameter; No. 2 (1 to 1.5 inches), No. 1 (1.5 to 2.5 inches), Mammoth (2.5 to 3.5 inches) and Super Mammoth (>4.5 inches). Values presented are means of three replications with 30 propagules per 1.2-m ² plot per year.								