

# 'Florida Sunrise' Caladium

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Additional index words. *Caladium ×hortulanum*, tubers, production yields

Caladiums (*Caladium ×hortulanum* L.) planted in landscapes or forced in containers offer a variety of leaf colors and shapes found in few cultivated plants. Caladiums differ significantly from most of their close relatives in the Araceae in that they produce colorful and abundant leaves from a single tuber. Although the tubers can be planted in many locations, from full sun to heavy shade, the most limiting factor in their successful cultivation is that they require a minimum soil and air temperature of 18C (Harbaugh and Tjia, 1985). Tuber production is limited to regions that have up to six continuous months >18C. The muck soil areas of south-central Florida meet the temperature conditions, and, consequently, at least 90% of the caladium tubers used throughout the world is produced in this region. Although up to 1500 caladium cultivars have been grown in commerce, fewer than 100 are grown currently (Wilfret and Turner, 1982). Of these, ≈20 comprise 85% of caladium sales. A successful caladium cultivar must perform well in the landscape or container and should produce large, high-quality tubers in the propagation field. The cultivar should be vigorous, healthy, and easily propagated. Hybridization among commercial caladium cultivars and their subsequent culture and selection on muck and sandy soils culminated in the development and release in 1987 of the cultivar Florida Sunrise from the Univ. of Florida (Fig. 1). This cultivar has characteristics that make it suitable for forcing in containers and desirable as a landscape plant in sunny and shady locations.

## Origin

'Florida Sunrise' originated from a selection (S-137) made in 1978 from a cross between 'Candidum' and 'Frieda Hemple' in 1976. The ancestry of both parents is unknown. The seed parent 'Candidum' is the top-selling cultivar in commerce and produces large healthy tubers with many leaves, which have large green veins and white interveinal areas. 'Frieda Hemple' was selected for its

bright-red foliage, short growth habit, and multiple leaves. 'Florida Sunrise' tubers were propagated on fumigated sandy soils at Bradenton, Fla., and increased under aseptic conditions in the tissue culture laboratory during 1980 and 1981.

## Description

Large (25 cm in diameter) 'Florida Sunrise' tubers planted in EauGallie fine sandy soil produce 35 to 40 leaves up to 37 cm long and 26 cm wide and have a maximum plant height of 80 cm after 2 months in full sun. Leaves have medium-green (green 137B) (Royal Horticultural Society, 1986) margins with three large red (red 53C) primary veins and eight medium-red secondary veins. The central area of the leaf has white (green-white 157C) interveinal areas subtended by timely netted green (green 137C) veins. The petiole is rose (grayed-red 181D) with brown (grayed-orange 177A) stipules and blends to green (yellow-green 145C) at its distal end. When grown under 40% to 50% shade, the red (red 53B) veins are more intense and the green (green 137A) margins are darker green; the white interveinal areas are overlaid with light rose (red 51B).

'Florida Sunrise' tubers have three to five dominant vegetative buds that should be de-eyed for optimum performance in containers.

The tuber surface is medium brown (gray-brown 199B), and the leaf sheaths surrounding the dominant growths are rose-brown (grayed-orange 177B) with darker-brown (brown 200B) vertical venation. Tubers are firm, multisegmented, and have a medium-yellow (yellow-orange 16B) cortical area.

## Performance

'Florida Sunrise' production has been compared to that of some widely used commercial caladium cultivars. When grown as three intact no. 1 tubers (≥ 3.8 < 6.4 cm in diameter) per 15-cm (1.47-liter) pot in a greenhouse with 40% shade and a night/day range of 21/34C, 'Florida Sunrise' was similar in height to 'Candidum Junior' and 'Frieda Hemple' but shorter than 'Carolyn Whorton' or 'Fannie Munson' (Table 1). Leaf count was less than that of 'Candidum Junior' but higher than or equal to that of the other cultivars. De-eying the main vegetative buds before planting the tubers increased the number of leaves per tuber but decreased plant height (Table 2) and, therefore, delayed marketability of the fin-

Table 1. Plant characteristics of caladium cultivars grown in 15-cm (1.47-liter) pots in Spring 1984.

Cultivar <sup>a</sup>	Plant ht (cm)	Leaves (no.)
Florida Sunrise	54.2 b <sup>y</sup>	32.7 b
Candidum	58.3 ab	32.0 b
Candidum Junior	54.5 b	44.2 a
Carolyn Whorton	61.7 a	23.7 c
Fannie Munson	62.0 a	24.7 c
Frieda Hemple	53.8 b	31.8 b

Grown in a glasshouse in 40% shade with three no. 1 tubers Per Pot; evaluated 8 weeks after planting. Means are of three replications of three pots each. <sup>y</sup>Mean separation within columns by Duncan's multiple range test,  $P = 0.05$ .

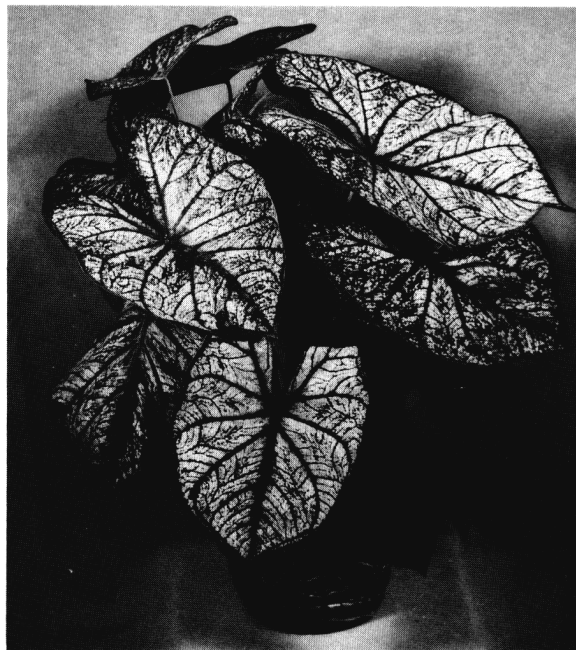


Fig. 1. Containerized 'Florida Sunrise' caladium.

Received for publication 2 July 1992. Accepted for publication 23 Nov. 1992. Florida Agricultural Experiment Station Journal Series no. R-8720. Special appreciation is acknowledged to the Fred C. Gloeckner Foundation for partial support of this research and to the caladium growers of Highlands County, Fla., for providing initial genetic material. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement* solely to indicate this fact. <sup>1</sup>Professor of Environmental Horticulture, Geneticist.

Table 2. Effect of de-eying caladium tubers on cultivar plant development when forced in containers (Summer 1984).

Cultivar <sup>z</sup>	Leaves (no.)		Plant ht (cm)	
	Intact	De-eyed	Intact	De-eyed
Florida Sunrise	22.7 bc	39.5 ab	46.2 bc <sup>y</sup>	41.2 bc
Mrs. Arno Nehrling	17.7 c	29.0 c	38.5 cd	30.3 d
Itacarpus	18.7 c	27.4 c	48.2 bc	42.3 b
Texas Beauty	24.0 b	34.4 bc	33.2 d	28.9 d
Frieda Hemple	26.0 ab	41.8 a	43.7 c	34.0 cd
Carolyn Whorton	22.2 bc	30.7 c	56.8 a	44.5 ab
Candidum	28.0 a	42.5 a	51.2 ab	47.7 a

<sup>y</sup>Three no. 1 tubers per 15-cm (1.47-liter) pot grown under 30% shade from 23 Aug. to 17 Oct. 1984. Means are of three replications of three pots each.

<sup>z</sup>Mean separation within columns by Duncan's multiple range test,  $P = 0.05$ .

ished product by 7 to 10 days compared to pots with intact tubers. 'Florida Sunrise' leaf emergence time was intermediate between 'Candidum' and 'Frieda Hemple', and the first leaf unfurled 12 to 15 days after planting intact tubers under optimum growing conditions (unpublished data).

'Florida Sunrise' was compared to several commercial virus-free caladium cultivars for tuber production on fumigated EauGallie fine sand at Bradenton in 1982 and 1983 (Table 3). In 1982, the weight of 'Florida Sunrise' tubers was higher than that of 'Candidum Junior' and 'Carolyn Whorton'. 'Florida Sunrise' produced mostly jumbo and no. 1 and few mammoth and

no. 2 tubers. In 1983, 'Florida Sunrise' tuber weight was less than that of 'Candidum' but more than that of 'Frieda Hemple'. 'Florida Sunrise' tubers produced on muck soil in Lake Placid, Fla., were slightly smaller than those produced on sandy soils at Bradenton, but were larger than those of 'Frieda Hemple' or 'Carolyn Whorton' in both locations. Outstanding 'Florida Sunrise' characteristics include its large leaves with a rose overlay, tuber production, and upright growth habit that make it suitable for the landscape.

'Florida Sunrise' is intended for use as a container-grown or landscape plant in semi-shaded locations. Cultivar performance in con-

tainers is enhanced when the main buds are de-eyed and three no. 1 tubers are planted per 15 cm pot (1.47-liter) pot. Although extensive research has been performed on small plots of this cultivar grown in muck or sandy soils, growers are encouraged to plant only limited quantities of Florida Sunrise until they have gained experience in its production. Standard postharvest tuber treatment is recommended; preplant hot-water treatment will prolong stock life.

#### Availability

Information on the availability of 'Florida Sunrise' tubers may be obtained from Florida Foundation Seed Producers, P.O. Box 309, Greenwood, FL 32443.

#### Literature Cited

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Table 3. Tuber production of 'Florida Sunrise' and virus-free commercial caladium cultivars grown on sandy soil at Bradenton, Fla. (1982 and 1983).

Cultivar	Tubers dug (g)	Percent tubers dug (by grade) <sup>z</sup>					Marketable tubers dug (no.)	Production value <sup>y</sup>
		Super mammoth	Mammoth	Jumbo	No. 1	No. 2		
				1982 <sup>x</sup>				
Florida Sunrise	1545 ab <sup>w</sup>		17.1	45.7	34.3	2.9	12.7 bc	45.5 ab
White Christmas	1735 a	2.3	9.3	46.5	30.2	11.6	14.3 c	52.4 a
Postman Joyner	1382 a-c		2.6	41.0	41.0	15.4	13.0 bc	36.2 bc
Candidum	1313 a-c	2.7	13.5	24.3	46.0	13.5	12.3 a-c	43.5 ab
Frieda Hemple	1240 bc		7.0	30.2	51.2	11.6	14.3 c	41.5 ab
Candidum Junior	965 cd		8.6	20.0	48.6	22.9	11.7 ab	31.3 bc
Carolyn Whorton	722 d			36.7	33.3	30.0	10.0 a	24.4 c
				1983 <sup>v</sup>				
Florida Sunrise	1825 b		8.0	17.3	57.4	17.3	25.0 bc	66.1 a
Candidum	2765 a		3.5	42.2	34.2	20.1	28.3 cd	81.1 a
Candidum Junior	1672 b			14.9	45.5	39.6	33.7 d	63.9 ab
Frieda Hemple	830 c			4.5	32.5	63.0	15.3 a	22.5 c
Carolyn Whorton	1338 bc		1.3	10.3	62.8	25.6	22.3 b	45.3 b

<sup>x</sup>Tubers graded by maximum diameter: super mammoth ( $\geq 11.4$  cm), mammoth ( $\geq 8.9 < 11.4$  cm), jumbo (2 6.4 8.9 cm), no. 1 ( $\geq 3.8 < 6.4$  cm), and no. 2 ( $\geq 2.5 < 3.8$  cm).

<sup>y</sup>Value = 1N no. 2 + 2N no. 1 + 4N jumbo + 8N mammoth + 12N super mammoth, where N = number of tubers in each grade.

<sup>z</sup>Ten tuber chips (8 cm<sup>2</sup>) per plot spaced 15 cm apart.

<sup>v</sup>Mean separation within columns within years by Duncan's multiple range test,  $P = 0.05$ .

<sup>w</sup>Twenty tuber chips (8 cm<sup>2</sup>) per plot spaced 15 cm apart.