

Caladium Cultivars 'Pink Panther' and 'Crimson Skye'¹

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Caladium is an ornamental aroid often grown in containers or planted in the landscape as accent and border plants. Caladium plants are valued for their variably shaped bright foliage. Most commercial caladium plants are produced by forcing tubers in containers. Florida growers produce essentially all the caladium tubers used in the United States and in the world for production of pot plants and direct planting in the landscapes. Most commercial cultivars are of the fancy-leaf type; however, the demand for lanceleaved cultivars has been on the rise. Two new lance-leaved cultivars, 'Pink Panther' and 'Crimson Skye', were released in 2020 by the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) caladium breeding program at the Gulf Coast Research and Education Center (GCREC) to meet the need for more lance-leaved cultivars. This article is prepared for growers who are interested in growing caladium as a horticultural crop and for greenhouse or nursery growers who are interested in producing potted caladium plants.

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Origin

'Pink Panther' originated from a cross between 'Carolyn Whorton' and the proprietary breeding line UF-4609 that was made in Wimauma, FL in summer 2012. Breeding line UF-4609 was a progeny of a cross between 'Cranberry Star' and 'Florida Sweetheart'. 'Crimson Skye' originated from a cross between the proprietary caladium breeding line UF-477 and 'Carolyn Whorton' that was made in Wimauma, FL in summer 2012. UF-477 was progeny of 'Florida Sunrise' and 'Florida Sweetheart'.

Description

Plants of 'Pink Panther' (Figure 1 and 2) are approximately 16 inches tall and 26 inches wide and have upright, outwardly arching leaves. Mature leaves average 8.7 (length) \times 7.1 inches (width). Leaves are elongated and have a sagittate-cordate base, an acuminate to acute apex, slightly undulate margins, and insignificant lobes. On the upper leaf surface, a green margin, up to 4/10 inches wide, borders the entire leaf except for the basal leaf valley, where it is gray purple. The venation pattern is pinnate, with up to 12 red-purple primary veins from a central main vein of red purple and connecting marginally with a thin gray-purple vein that parallels the leaf margin. Secondary and tertiary veins tend to be netted across the whole leaf. Numerous irregular blotches of red (light pink) are scattered across the leaf blade between veins. Occasionally streaks of yellow green may appear between veins. Petioles are sturdy, erect, and orange at the apex, but the color diffuses into a grayed orange at the base.

Plants of 'Crimson Skye' were approximately 13.8 inches tall and 23.6 inches wide and had outwardly arching leaves. Mature leaves average 8.3 inches (length) \times 6.3 inches (width). Leaves are ovate in shape and have a cordate base,

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an acuminate apex, slightly undulate margins, and two obvious lobes. On the upper leaf surface, a green margin borders the entire leaf except for the basal leaf valley, where it is grayed purple. The venation pattern is pinnate, with up to 14 grayed-purple primary veins from a central main vein of grayed red to red and connecting marginally with a thin grayed-purple vein that parallels the leaf margin. Secondary and tertiary veins tend to be netted across the whole leaf. Numerous irregular blotches of red purple to red are scattered across the leaf blade between main veins. Petioles are gray orange with darker gray-orange streaks.



Figure 1. A typical plant of 'Pink Panther' caladium (47 days old) forced from four No.1-sized (1.5 to 2.5 inches) tubers in an 8-inch container. Credits: K. Druffel, UF/IFAS



Figure 2. Typical leaves of 'Pink Panther' caladium grown in the open field in full sun. Credits: Z. Deng, UF/IFAS

Tuber Yield Potential

'Pink Panther' and 'Crimson Skye' were evaluated for tuber production and plant performance in Wimauma, FL in 2018 and 2019. In each growing season, caladium tuber chips (pieces or seed pieces) were planted in plasticmulched, raised beds, and plants were grown in the field in full sun, as described by Deng and Harbaugh (2006). In the 2018 season, ground beds were fumigated with Pic-Clor 60 and Prowl® H20. Caladium seed tubers were treated in hot water (50°C) for 30 minutes. Seed tuber pieces were dusted with a biological fungicide RootShield® Plus WP and planted manually in late April. Fifty pounds of granular nitrogen per acre were incorporated into the soil prior to bedding. Two drip tapes were buried under the plastic mulch. Fertigation began in late May, injecting a commercial liquid fertilizer at one pound of nitrogen per acre per day, and stopped on 31 October. New crop tubers were dug and washed on 17 December and air-dried for approximately 50 days inside a greenhouse. Dried tubers were weighed, graded, and counted as described by Deng and Harbaugh (2006). Tuber grades and counts were converted into a production index to show the relative economic value of the harvested tubers. For the 2019 evaluation, beds were fumigated with Pic-Clor 60. Fifty pounds of granular nitrogen per acre was incorporated into the soil prior to bedding. Fertigation began on 1 June, by injecting a commercial liquid fertilizer at one pound of nitrogen an acre a day. The fertilization was increased to two pounds of nitrogen an acre a day on 24 July and ended on 31 October. Tubers were dug, washed, weighed, graded, and counted as described by Deng and Harbaugh (2006).



Figure 3. A typical plant of 'Crimson Skye' caladium (35 days old) forced from four No.1 tubers in an 8-inch container. Credits: K. Druffel, UF/IFAS

The number, weight, and production index of marketable tubers (Grade #2 to Super Mammoth) produced by 'Pink Panther' in 2018 was 59.0, 4.0 pounds, and 87.7, respectively, all significantly higher than those of 'Fairytale Princess' or 'Red Hot' (Table 1). The two standard cultivars grew poorly, and their tuber weight was only 6% to 9% of the tuber weight of 'Pink Panther'. It was suspected that these two cultivars might be highly sensitive to the herbicide Harmony, which was applied to the bed top and plants in early June 2018 to control weeds in the field. In the 2019 growing season, the number, weight, and production index of marketable tubers for 'Pink Panther' were 46.7, 4.3 pounds, and 77.0, respectively. Compared to 'Florida Sweetheart', a high-yielding cultivar, 'Pink Panther' did not show significant differences. As for tuber grade distribution, 'Pink Panther' primarily produced No.1 or No.2-sized tubers and a very low percentage of Jumbos. This tuber size distribution is typical with lance-leaved cultivars, including 'Florida Sweetheart'.



Figure 4. Typical leaves of 'Crimson Skye' caladium (approximately 8 weeks old) grown under shade in Wimauma, FL. The plant was grown from one No.1 tuber. Credits: K. Druffel, UF/IFAS

The tuber weight, number of marketable tubers, and production index of 'Crimson Skye' in 2018 were 4.0 pounds, 64.3, and 93.3, respectively (Table 1). These values were not significantly different from those of 'Pink Panther' but were significantly greater than those of 'Fairytale Princess' and 'Red Hot'. 'Crimson Skye' did not differ significantly from 'Florida Sweetheart' in tuber weight, number of marketable tubers, or production index. The primary grades of tubers produced by 'Crimson Skye' were No.2 (57.9% to 58.6%) and No. 1 (36.1% to 40.8%) (Table 1).

Container Trials

The suitability of 'Pink Panther' and 'Crimson Skye' for container plant production was evaluated by forcing tubers in 4.5-inch containers (diameter) in spring/summer 2019 ('Pink Panther') or spring/summer 2020 ('Crimson Skye') following the protocol of Harbaugh and Tjia (1985). In both years, plant height, plant width, number of leaves, and foliar characteristics were recorded approximately 8 weeks after planting. Quality of the potted caladium plants was rated on a scale of 1 to 5, with 1 = very poor, unattractive, totally unacceptable as potted plants with few leaves, and 5 = very attractive, full plants with a symmetrical shape, an appropriate height, and many bright, colorful leaves.

Intact and de-eyed 'Pink Panther' tubers sprouted 24 to 27 days after potting up, similar to 'Florida Red Ruffles' (16 to 27 days) but approximately 6 to 8 days later than 'Florida Sweetheart' (Table 2). 'Pink Panther' plants forced from intact tubers had a more upright growth habit and were 2.0 to 2.5 inches taller than 'Florida Red Ruffles' and 'Florida Sweetheart', but did not show significant differences in plant width, leaf number, leaf length, and leaf width, or plant quality rating. Similarly, 'Pink Panther' plants forced from de-eyed tubers did not show significant differences from 'Florida Red Ruffles' and 'Florida Sweetheart' in plant height and width, leaf number, length and width, and plant quality rating. Compared to plants from intact tubers, 'Pink Panther' plants forced from de-eyed tubers were approximately 2 inches shorter and one inch narrower and had 5 more leaves, and on average, leaves were 3/4 inch shorter and about 2 inches narrower. Overall, plants from de-eyed tubers had more leaves with more uniform sizes and received a higher quality rating. Tuber de-eyeing was beneficial and may be essential for producing high-quality pot plants from 'Pink Panther' tubers in small containers.

Intact and de-eyed 'Crimson Skye' tubers sprouted about 23 and 26 days after potting, respectively, 4 to 5 days later than 'Florida Sweetheart' (Table 2). 'Crimson Skye' plants forced from intact or de-eyed tubers were 3.7 or 3.1 inches taller than 'Florida Sweetheart' and had 15.7 or 11.8 more leaves than 'Florida Sweetheart' (Table 2). 'Crimson Skye' did not differ significantly from 'Florida Sweetheart' in other plant or leaf parameters, whether tubers were intact or de-eyed. 'Crimson Skye' plants forced in 5-inch diameter containers had an average width of 15.5 (intact) and 14.1 inches (de-eyed), average leaf length of 6.0 (intact) and 4.1 inches (de-eyed). 'Crimson Skye' tubers, intact or de-eyed, produced quality pot plants in small containers, receiving a quality rating of 3.5 (intact) or 3.7 (de-eyed). These quality ratings suggest that tuber de-eyeing is unnecessary for 'Crimson Skye'.

Plant Performance in Open Fields

'Pink Panther' and 'Crimson Skye' were evaluated in 2018 and 2019 for plant growth, leaf color display, sunburn tolerance, and Xanthomonas bacterial leaf blight tolerance, in the same field plots used for evaluating tuber production. A scale of 1 to 5 was used for rating plant growth, with 1 being very poor and 5 being excellent. A scale of 1 to 5 was also used for rating leaf color display, with 1 being very poor and 5 being excellent. Sunburn tolerance was evaluated on a scale of 1 to 5, with 1 being very susceptible to sunburn, 3 having some visible sun-damaged areas or holes but acceptable as a garden plant, and 5 being resistant to sunburn. Xanthomonas bacterial leaf blight tolerance was evaluated on a scale of 1 to 5, with 1 being numerous blight spots and completely unsightly and 5 being resistant to leaf blight and lacking any visible blight spots, as described by Seijo et al. (2010).

'Pink Panther' plants received a rating of 2.7 to 4.5 in the 2018 and 2019 growing seasons (Table 3), which were significantly higher than 'Fairytale Princess' in four of six evaluations and higher than 'Red Hot' scores in all three evaluations. 'Pink Panther' was not significantly different from 'Florida Sweetheart' in all three evaluations in 2019. Leaf color rating of 'Pink Panther' ranged from 2.7 to 4.5, not significantly different from that of 'Fairytale Princess', 'Red Hot', or 'Florida Sweetheart' (Table 3). For sunburn tolerance, 'Pink Panther' received a score of 3.0 to 4.7 (Table 4), higher than the score of 'Fairytale Princess' and 'Florida Sweetheart' in one or two evaluations. These scores indicate good sunburn tolerance in 'Pink Panther'. The Xanthomonas bacterial leaf blight tolerance score of 'Pink Panther' ranged from 3.7 to 4.8 (Table 4), which indicates good tolerance in 'Pink Panther'. These scores were not significantly different from those of 'Red Hot' or 'Florida Sweetheart' but higher than 'Fairytale Princess' in one of five evaluations.

Plants of 'Crimson Skye' received a plant performance score of 2.0 to 4.0 (Table 3), which were significantly lower than the scores of 'Pink Panther' in three of six evaluations but significantly higher than the scores of 'Fairytale Princess' and 'Red Hot' in three evaluations. Leaf color rating ranged from 3.0 to 4.5, comparable to 'Pink Panther', 'Fairytale Princess', and 'Red Hot' but significantly higher than 'Florida Sweetheart' in one of three evaluations (Table 3). For sunburn tolerance, 'Crimson Skye' received a score of 3.0 to 5.0 (Table 4), not significantly different from the scores of 'Pink Panther' or 'Red Hot', but higher than the score of 'Fairytale Princess and 'Florida Sweetheart' in one or two evaluations. These scores indicate that 'Crimson Skye' expressed a good level of sunburn tolerance. The *Xanthomonas* bacterial leaf blight tolerance scoresof 'Crimson Skye' in the 2018 and 2019 growing seasons ranged from 3.5 to 4.7 (Table 4), indicating good tolerance to this disease in 'Crimson Skye'. No differences were observed between 'Crimson Skye' and 'Florida Sweetheart' or 'Red Hot' in leaf blight tolerance. 'Crimson Skye' received a higher blight tolerance score than 'Fairytale Princess' in one of five evaluations.

Plant Performance in Garden Trials

Garden trials, one in full sun and one under shade, were conducted to evaluate the plant performance of 'Pink Panther' and 'Crimson Skye' in gardens. Plants were rated from 1 to 5 for plant growth, leaf color display, sunburn tolerance, and leaf blight tolerance.

'Pink Panther' plants in the shaded garden beds had 33% fewer leaves than 'Florida Red Ruffles' plants (Table 5). Other than this, 'Pink Panther' and 'Florida Red Ruffles' were not significantly different in plant rating, leaf color, leaf length, leaf width, sunburn tolerance, or leaf blight tolerance, in full sun or under partial shade (Table 5). In both garden trials, 'Pink Panther' showed good sunburn tolerance and leaf blight tolerance, with ratings between 4.2 and 5.0 (Table 5).

Plants of 'Crimson Skye' performed well in the garden trials in full sun and under shade, receiving a plant rating of 4.3 to 5.0, leaf color rating of 3.0 to 3.7, sunburn tolerance rating of 3.0 to 3.7, and leaf blight tolerance rating of 3.6 to 4.3 (Table 6). These scores were not significantly different from those of 'Florida Sweetheart', the top lance-leaved cultivar in commercial production. Compared to 'Florida Sweetheart' at 3 months post-planting, 'Crimson Skye' plants were more compact but had more leaves, and leaves were shorter and narrower (Table 6).

Recommendation

'Pink Panther': Its tuber yield potential and grade distribution are expected to be similar to those of 'Florida Sweetheart', the most popular lance-leaved commercial cultivar. 'Pink Panther' is similar to 'Florida Red Ruffles' in tuber sprouting time (approximately 26 days), but is 1–2 weeks later than 'Florida Sweetheart'. Intact tubers of 'Pink Panther' tend to produce upright plants with strong apical dominance and large leaves. To produce high-quality pot plants in small containers (4-inch diameter or smaller), tubers need to be de-eyed. De-eyed 'Pink Panther' tubers produce shorter plants with more leaves, and leaves are smaller and more uniform in size and have a larger pink center. 'Pink Panther' has excellent sunburn and bacterial leaf blight tolerance and can perform well in shady and sunny landscapes.

'Crimson Skye': Tuber yield potential is comparable to other lance-leaved cultivars. It is well suited for producing high-quality prefinished and finished plants in containers with small to large diameters. Tuber de-eyeing is optional, but it can improve the quality of finished pot plants. 'Crimson Skye' has shown good sunburn tolerance and resistance to leaf spot disease, and it is suitable for use in a range of landscape conditions, from full sun to shady locations.

For both cultivars, standard postharvest treatments are recommended for newly harvested tubers (Harbaugh and Tjia 1985), and preplant hot-water treatment of seed tubers (Rhodes 1964) is encouraged.

Availability

Commercial production of 'Pink Panther' and 'Crimson Skye' is required to have a licensing agreement with the Florida Foundation Seed Producers, Inc., P.O. Box 309, Greenwood, FL 32443. Information on tuber availability and licensing agreements can be obtained from the Florida Foundation Seed Producers, Inc. (http://www.ffsp.net/).

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Seijo, T., N. A. Peres, and Z. Deng. 2010. "Characterization of Strains of *Xanthomonas axonopodis* pv. *dieffenbachiae* from Bacterial Blight of Caladium and Identification of Sources of Resistance for Breeding Improved Cultivars." *HortScience* 45 (2): 220–224. https://doi.org/10.21273/ HORTSCI.45.2.220 Table 1. Tuber weight, marketable number, production index, and grade distribution of 'Pink Panther', 'Crimson Skye', 'Fairytale Princess', 'Florida Sweetheart', and/or 'Red Hot' (standard varieties) caladiums in experimental field plots in 2018 and 2019. Values presented are means of three plots with 30 propagules planted in a plot of 13 square feet.

		Tuber			Tuber grade distribution (%)						
Cultivars	Weight (lb)	Marketable number	Production index		Jumbo	No. 1	No. 2				
				2018							
Pink Panther	4.03	59.0	87.7		3.6	37.2	59.2				
Crimson Skye	4.01	64.3	93.3		1.4	40.8	57.9				
Fairytale Princess	0.26	8.3	8.3		0	0	100				
Red Hot	0.35	6.7 8.0			0	21.5	78.5				
	2019										
Pink Panther	4.41	46.7	77.0		4.2	52.7	43.0				
Crimson Skye	4.63	52.0	78.7		5.3	36.1	58.6				
Fl. Sweetheart	3.75	43.0	71.3		5.8	49.6	44.6				

The production index is an indicator of the economic value of tubers harvested per plot and is calculated as: N (No. 2s) + 2N (No. 1s) + 4N (Jumbos), where N = number of tubers in each grade. Tubers graded by maximum diameter; No. 2 (1.0 to 1.5 inches), No. 1 (1.5 to 2.5 inches), and Jumbo (2.5 to 3.5 inches).

Table 2. Plant height and width, leaf number, length and width, number of blooms (inflorescences), and plant quality of Pink Panther' and 'Crimson Skye' in comparison
with 'Florida Red Ruffles' and/or 'Florida Sweetheart' (standard varieties) grown in small containers. No. 1 tubers were planted in 4.5-inch containers (one tuber per
container) and grown in a shaded glasshouse in Wimauma, FL in 2019 or 2020. Values represent the means of seven or six plants (replicates) produced from intact or
de-eyed No. 1 (1.5 to 2.5 inches in diameter) tubers planted individually per container.

	Days to	o sprout	Plant he	ight (in)	Plant w	idth (in)	Leave	s (no.)	Leaf ler	ngth (in)	Leaf w	idth (in)	Bloon	ns (no.)	Quality	v rating
Cultivar	Intact	De-eye	Intact	De-eye	Intact	De-eye	Intact	De-eye	Intact	De-eye	Intact	De-eye	Intact	De-eye	Intact	De-eye
									2019							
Pink Panther	24.1	26.6	10	7.7	13.6	12.7	8.9	13.9	7.5	5.9	5.5	3.6	0.3	0	2.7	3.7
Fl. Red Ruffles	26	26.9	7.7	8.2	13.9	13.2	7.4	17.4	7.3	6.2	5.5	4.1	0	0	2.5	3.7
FI. Sweetheart	17.7	18.7	7.8	6.8	14.3	13.8	20.7	29	7.6	5.2	5.9	3.4	0.6	0	3.1	4.4
									2020							
Crimson Skye	23.2	26.3	11.8	1	15.5	14.1	33.2	36.8	7.8	5.9	Q	4.1	0	0	3.5	3.7
Fl. Sweetheart	18	22	8.1	8	15.9	15.3	17.5	25	8.2	6.2	6.3	4.3	0.2	0	3.1	4
Plant Quality plants with a	of the pott symmetric	ed caladiur al shape, ar	n plants w I appropria	as rated fro	m 1 to 5, v ind many l	vith 1 = ver) bright, colo	/ poor, una rful leaves	attractive, t	otally unac	ceptable a	s potted p	lants with f	ew leaves,	and 5 = ver	y attractiv	e, full

Table 3. Plant performance and leaf color display ratings of 'Pink Panther', 'Crimson Skye', 'Fairytale Princess', 'Florida Sweetheart', and 'Red Hot' (standard varieties) caladiums grown from 1-inch tuber propagules in ground beds in full sun in Wimauma, FL in 2018 and 2019. Plant performance and leaf color rating values are means of three plots based on whole plot evaluation in each evaluation.

Cultivars	Plant performance rating						Leaf color rating						
	July	Aug.	Sep.	July	Aug.	Sept.	July	Aug.	Sep.	July	Aug.	Sept.	
	2018	2018	2018	2019	2019	2019	2018	2018	2018	2019	2019	2019	
Pink Panther	2.7	4.5	4.3	3.7	3.5	3.0	4.5	4.0	4.0	4.0	4.0	2.7	
Crimson Skye	2.0	2.7	2.8	3.2	4.0	2.5	4.0	4.2	3.3	4.3	4.5	3.0	
Fairytale Princess	1.0	1.0	1.0	2.3	2.8	2.0	4.0	3.7	3.7	4.0	4.0	3.0	
Red Hot	1.0	1.0	1.0				4.5	4.2	4.2				
Fl. Sweetheart				2.8	3.0	1.7				3.0	3.5	1.8	

Plants were rated from 1 to 5, with 1 being very poor and 5 being excellent in plant vigor and fullness, on 27 July, 25 August, and 26 September 2018, and 13 July, 13 August and 18 September 2019.

Leaves were rated from 1 to 5, with 1 being very poor and 5 being excellent in leaf color display, on 27 July, 25 August and 26 September 2018, and 13 July, 13 August and 18 September 2019.

Table 4. Sunburn tolerance and leaf blight tolerance rating of 'Pink Panther' and 'Crimson Skye' caladium and commercial cultivars 'Fairytale Princess', 'Florida Sweetheart', and/or 'Red Hot' (standard varieties) grown from 1-inch tuber propagules in ground beds in full sun in Wimauma, FL in 2018 and 2019.

Cultivars		Su	unburn tol	erance rati	ng		Blight tolerance rating					
	July	Aug.	Sep.	July	Aug.	Sept.	July	Aug.	Sep.	Aug.	Sept.	
	2018	2018	2018	2019	2019	2019	2018	2018	2018	2019	2019	
Pink Panther	4.7	4.2	3.8	4.8	3.8	3.0	4.8	4.5	3.8	3.8	3.7	
Crimson Skye	4.3	4.2	3.0	5.0	4.5	3.7	4.7	4.3	3.5	4.7	3.5	
Fairytale Princess	2.7	2.8	3.5	3.7	4.2	3.3	4.0	3.3	3.7	4.3	4.0	
Red Hot	4.0	3.2	3.0				4.7	3.7	3.3			
Fl. Sweetheart				4.2	3.8	2.0				4.2	3.7	

Sunburn tolerance was rated from 1 to 5, with 1 being very poor and 5 being excellent without showing any signs of leaf burns and/or color bleaching on 27 July, 25 August and 26 September 2018, and 13 July, 13 August and 18 September 2019.

Xanthomonas blight tolerance was rated from 1 to 5, with 1 being numerous blight spots and completely unsightly and 5 being resistant without any blight spots on 27 July, 25 August and 26 September 2018, and 13 August and 18 September 2019.

Table 5. Plant growth rating, leaf size and color display rating of 'Pink Panther' and 'Florida Red Ruffles' caladiums in sun and shade trials in Wimauma, FL in 2019. Data were taken approximately 10 weeks after Jumbo-sized tubers were planted in the ground beds in full sun or inside a screenhouse (approximately 30% light exclusion).

Cultivars	Plant rating	Foliage color	Leaf number	Leaf length (inches)	Leaf width (inches)	Sunburn tolerance	Leaf blight tolerance					
				Shade								
Pink Panther	4.0	4.3	28.3	9.3	6.8	4.5	4.7					
Fl. Red Ruffles	4.3	4.0	42.3	7.6	5.2	4.0	5.0					
	Full sun											
Pink Panther	3.2	3.7	21.0	7.6	5.0	4.2	5.0					
Fl. Red Ruffles	4.5	3.3	26.7	6.6	4.7	4.2	5.0					

Plants were rated on a scale of 1 to 5, with 1 being very poor, 3 fair and acceptable, and 5 being excellent in plant vigor and fullness. Leaves were rated on a scale of 1 to 5, with 1 being very poor, 3 fair and acceptable, and 5 being excellent in leaf color display. Leaf sunburn tolerance was rated from 1 to 5, with 1 being very poor and 5 being excellent without showing any signs of leaf burn or color bleaching.

Xanthomonas blight tolerance was rated on a scale of 1 to 5, with 1 being numerous blight spots and completely unsightly and 5 being resistant without any blight spots.

Table 6. Plant rating, leaf size, and leaf color rating of 'Crimson Skye' and 'Florida Sweetheart' (standard variety) in sun and shade garden trials in Wimauma, FL in 2020. Data were taken approximately two and three months post planting after No.1 tubers were planted in the ground beds in full sun or inside a screenhouse (approximately 30% light exclusion).

Cultivars	Plant	rating	Foliag	Foliage color		tolerance	Leaf bligh	t tolerance					
	2-month	3-month	2-month	3-month	2-month	3-month	2-month	3-month					
				Shade									
Crimson Skye	4.3	4.7	3	3.7	3.3	3.7	4.3	4.0					
Fl. Sweetheart	4.7	5.0	3.3	3.3	3.7	2.7	4.0	3.7					
	Full sun												
Crimson Skye	4.3	5.0	3.7	3.7	3.3	3.0	3.6	4.0					
Fl. Sweetheart	4	4.3	3.7	3.0	3.7	3.3	4.0	4.0					

Plant was rated from 1 to 5, with 1 being very poor, 3 fair and acceptable, and 5 being excellent in plant vigor and fullness.

Leaf color were rated from 1 to 5, with 1 being very poor, 3 fair and acceptable, and 5 being excellent in leaf color display.

Leaf sunburn tolerance was rated from 1 to 5, with 1 being very poor and 5 being excellent without showing any signs of leaf burns or color bleaching.

Xanthomonas blight tolerance was rated from 1 to 5, with 1 being numerous blight spots and completely unsightly and 5 being resistant without any blight spots.