Lance-leaved caladium plants tend to be more adaptable to different container sizes and are less expensive and easier to ship from production sites to markets. Lance-leaved caladiums appeared to be more resilient to wind damages, droughts, sun, and shading than fancy-leaved caladiums, and they may perform better than fancy-leaved caladiums in the landscape when such stresses occur (Deng and Harbaugh, 2008).

Tuber yield is one of the most important factors determining the economic value of caladium cultivars for commercial tuber production. Many lance-leaved caladiums often produce small tubers (Wilfret, 1983), making it difficult for growers to produce caladium crops profitably. Developing new lance-leaved caladium cultivars with adequate tuber yield potential has been a priority breeding objective for the University of Florida (UF) caladium breeding program.

Currently, ‘Florida Sweetheart’ is the most widely grown lance-leaved commercial cultivar of any color, and ‘Florida Red Ruffles’ is the most widely grown red lance-leaved commercial cultivar (Bell et al., 1998; Deng et al., 2011). Both cultivars were introduced by the UF caladium breeding program. Plants of ‘Florida Sweetheart’ are compact and produce wide lance leaves with a rosy color and relatively large tubers (Wilfret, 1991a). ‘Florida Red Ruffles’ has a compact, upright growth habit and excellent sun tolerance (Wilfret, 1991b).

‘UF 432’ (Figs. 1 and 2) is a new and distinct lance-leaved caladium, and its leaves are characterized by thick, dark red to purple veins and a dark red to purple overtone. This cultivar was as productive as or more productive than ‘Florida Sweetheart’, produced high quality pot plants similar to ‘Florida Sweetheart’, and performed very well in the landscape with excellent sun tolerance. ‘UF 432’ produced fuller pot plants with more leaves than ‘Florida Sweetheart’.

‘UF 4015’ (Figs. 3 and 4) showed an overall plant growth habit similar to that of ‘Florida Red Ruffles’, but it is distinct from ‘Florida Red Ruffles’ with bright pink leaves and higher tuber yield potential. The availability of ‘UF 4015’ as a new cultivar can expand the color palette for caladium plants with this growth habit desired by greenhouse growers, nurseries, and gardeners.

Origin

‘UF 432’ was derived from a cross between ‘Candidum Junior’ and ‘Florida Sweetheart’ (Fig. 5) that was developed in Bradenton, FL, in Spring 2003. ‘UF 4015’ was progeny of a cross between ‘Aaron’ and ‘Florida Red Ruffles’ that was developed in Bradenton in Spring 2004 (Fig. 5). ‘UF 432’ was selected initially in 2004, and ‘UF 4015’ was selected initially in Aug. 2005. Since then, they have been propagated asexually through tuber division over 9–10 generations. The growth characteristics of these cultivars have been stable and consistent during asexual propagations and field trials.

‘Florida Sweetheart’ (U.S.P.P.8,526) was selected as the paternal parent of ‘UF 432’ because of its compact growth habit, bright rosy leaves, excellent sun tolerance, and good tuber yield potential. ‘Florida Sweetheart’ was derived from a 1977 cross between ‘Candidum Junior’ and ‘Red Frill’. ‘Florida Red Ruffles’ (U.S. PP13,136), progeny of (‘Red Frill’ × ‘Candidum Junior’) × ‘Red Frill’, was used as the maternal parent of ‘UF 4015’ for its compact growth habit, adaptability to pot plant production, dark red leaves, superb sun tolerance, and adequate tuber yield. ‘Candidum Junior’, a white fancy-leaved commercial cultivar, was selected for its excellent pot plant growth habit. ‘Aaron’ has white leaves and is known for its tuber yield and sun tolerance. The ancestors of ‘Aaron’, ‘Candidum Junior’, and ‘Red Frill’ are unknown.

Description

Descriptions of color [e.g., Royal Horticultural Society (RHS) 200B] for plant parts are based on comparison with the RHS Color Chart (Royal Horticultural Society, 1986). Plants used for describing color were grown from de-eyed, jumbo-sized (or equivalent) tubers (two per container) in 20.3-cm containers in a 35% shaded greenhouse. The potting mix used in the containers was Fafard 3B (Conrad Fafard Inc., Agawam, MA) amended with the controlled-release fertilizer Osmocote® (15N–2.6P–10K, 5–6 months; Scotts Co., Marysville, OH) at 4.8 kg m⁻³.

‘UF 432’. Plants of ‘UF 432’ (≈1.5 months old) had an average height of 36.7 cm. Leaves had an average size of 20 cm × 16 cm (length × width), are ovate, and have a cordate base, an acuminate to acute apex, an entire and slightly undulate margin, and two basal lobes. On the upper leaf surface, a green (RHS 139A) margin, up to 10 mm wide, borders the entire leaf. The leaf center is red (RHS 51B). Veneration is pinnate, with as many as 16 grayed-purple (RHS 183A) veins radiating from a central main vein of red (RHS 53C). Secondary and tertiary veins tend to be netted across the entire leaf. Small blotches of green (RHS 139A) and numerous specks of white, or both (RHS 155A) may appear along the margin and...
Leaves had an average of 23.8 cm in length, and 33% chloropicrin (by volume) at 196 kg ha$^{-1}$. Caladium seed pieces were planted 18 Apr. at 15-cm spacing between rows and in rows. The irrigation and fertigation system were the same as in 2007. Tubers were dug on 2 Dec. to 8 Dec. 2009, followed by washing, drying, weighing, grading, and counting as was done in 2007.

For the 2009 growing season, beds were fumigated with a mixture of 80% methyl bromide and 20% chloropicrin (by volume) at 448 kg ha$^{-1}$. Caladium seed pieces were planted 9 Apr. at 15-cm spacing between rows and in rows. The irrigation and fertigation system were the same as the one used in 2007, but one teaspoon ($\approx 7$ g) of the controlled-release fertilizer Osmocote (15N–2.6P–10K, 5–6 months) was applied to each plant on 21 July. Tubers were dug on 30 Nov. to 2 Dec. 2009, followed by washing, drying, weighing, grading, and counting as was done in 2007.

**Experimental design and data analysis.** Field plots were arranged in a randomized complete block design with three blocks, 1.2 m² plots planted with 30 caladium seed pieces. Two commercial cultivars Florida Red Ruffles and Florida Sweetheart were included as controls in each block. Analyses of variance were conducted using the PROC GLM procedure in SAS (SAS Institute, 2011) to compare the tuber yields of ‘UF 432’ and ‘UF 4015’ to that of ‘Florida Red Ruffles’ and ‘Florida Sweetheart’.

‘UF 432’. There were no significant differences between ‘UF 432’ and ‘Florida Sweetheart’ in tuber weight, numbers of marketable tubers, and PI in the 2007 growing season (Table 1). Again, the differences between ‘UF 432’ and ‘Florida Sweetheart’ in tuber weight, number of marketable tubers, and PI in the 2009 growing season were not significant. ‘UF 432’ had an 84.2% greater tuber weight and a 54.5% higher PI than ‘Florida Sweetheart’ in the 2008 season.