Florida MedallionTM 'FL 16.30-128' Strawberry

Cheryl Dalid, Luis F. Osorio, Natalia A. Peres, Seonghee Lee, and Vance M. Whitaker

Gulf Coast Research and Education Center, University of Florida, 14625 CR 672, Wimauma, FL 33598, USA

Anne Plotto and Jinhe Bai

USDA-ARS, US Horticultural Research Laboratory, 2001 South Rock Road. Fort Pierce, FL 34945, USA

Keywords. Fragaria × ananassa, fruit breeding, small fruit

Currently the main strawberry (Fragaria × ananassa) grown in Florida is 'Florida Brilliance' (Whitaker et al. 2019; US Patent PP30,564). Commercialized in 2018, it accounted for ~50% of the acreage in westcentral Florida in 2024. This cultivar has high early yield and uniformly shaped, medium-sized, and glossy fruit. Its open plant architecture and long stems facilitate efficient harvesting. In recent years, Sweet SensationTM 'Florida127' (Whitaker et al. 2015; hereafter referred to as 'Florida127'; US Patent PP25, 574) has been the second leading cultivar, notable for its large fruit size and sweet flavor. However, despite being considered a premium flavored cultivar, 'Florida127' acreage has decreased in recent years, partly because of its lower yields in December compared with 'Florida Brilliance'. Therefore, there remains a need for varieties with both high early yields similar to 'Florida Brilliance' and premium flavor similar to 'Florida127'. The introduction of Florida MedallionTM 'FL 16.30-128' (hereafter referred to as 'FL 16.30-128'; US Patent PP33,451) in 2020 has provided such an option. As a result, this cultivar increased to about 15% of the acreage in central Florida by 2024. Trials of 'FL 16.30-128' were conducted on the research plots of the University of Florida Gulf Coast Research and Education Center in Wimauma, FL, USA; at the Florida Strawberry Growers Association headquarters in Dover, FL, USA; and on commercial farms in west-central Florida.

Origin

Florida MedallionTM 'FL 16.30-128' (hereafter referred to as 'FL 16.30-128'; US Patent PP33,451) strawberry originated from a 2016 cross between unreleased selection FL 13.27-142 (female parent) and unreleased selection FL 12.90-53 (male parent)

Received for publication 17 Mar 2025. Accepted for publication 16 Apr 2025.

Published online 9 Jun 2025.

(Fig. 1). FL 13.27-142 was chosen as a parent for its flavor, firmness and conical shape, and FL 12.90-53 was chosen primarily for its early yield. Seeds from this cross were germinated and seedlings evaluated during the 2016–17 season.

During the 2018-19 and following seasons, yield and fruit quality data were collected from replicated trials conducted at the Gulf Coast Research and Education Center (GCREC). Field plots were prepared and maintained according to current commercial practices for annual strawberry plasticulture in Florida. Beds were spaced 1.2 m on center and were 90 m long, 70 cm wide, 15 cm high at the edges, and 18 cm high in the center and were covered with a single layer of black, high-density polyethylene mulch. Preplant fumigation consisted of a 65:35 mixture of 1,3-dichloropropene and chloropicrin (Telone C35, Dow AgroSciences, Midland, MI, USA). Each bed contained two rows of plants spaced 38 cm apart within rows and 28 cm apart between rows within beds. All

trials were conducted using bare-root plants. Five replicate plots (10 plants per plot) of each genotype were planted in a randomized complete block design at the GCREC. The trials were planted between 9 and 11 Oct in each year; the commercial planting period ranges from $\sim\!25$ Sep to 20 Oct. Overhead irrigation from impact sprinklers was applied for plant establishment on a 15-min-on 15-min-off cycle during daylight hours for up to 10 d after transplanting, after which water and fertilizer were applied exclusively through a single drip tape based on recommendations presented in Agehara and Hochmuth (2023).

All ripe fruits (at least three-quarters red) were harvested, graded, counted, and weighed twice a week from December through March. Fruits that were diseased, misshapen, small (<10 g), or rain damaged were considered unmarketable, and the remaining fruits were weighed to determine the marketable yield in grams on a per plant basis. Once per month, fresh fruits were transported on the day of harvest via an air-conditioned vehicle to the US Department of Agriculture Agricultural Research Service, US Horticultural Research Laboratory in Fort Pierce, FL, USA and stored at 4 °C overnight. The next day, flavor evaluations by a trained sensory panel and measurement of soluble solids content (SSC), pH, titratable acidity (TA; % citric acid equivalents), and firmness were conducted on fruit from the same field plots as previously described (Plotto et al. 2013).

Separate field trials were conducted during the 2019–20, 2020–21, 2021–22, 2022–23, and 2023–24 seasons to determine resistance to fruit, foliar, and crown pathogens. Inoculation and rating methods for *Neopestalotiopsis* spp., anthracnose fruit rot (caused by *Colletotrichum acutatum* species complex), charcoal

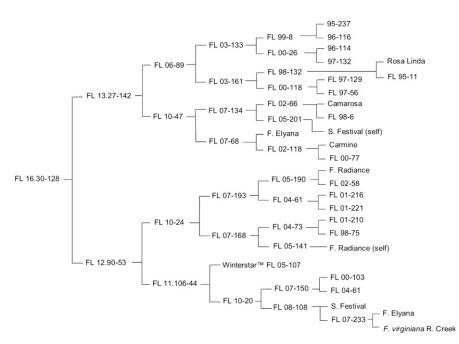


Fig. 1. Pedigree of Florida Medallion™ 'FL 16.30-128' strawberry. The female parent is indicated on the upper side of each bifurcation.

V.M.W. is the corresponding author. E-mail: vwhitaker@ufl.edu.

This is an open access article distributed under the CC BY-NC license (https://creativecommons.org/licenses/by-nc/4.0/).



Fig. 2. Plants and fruit of Florida Medallion™ 'FL 16.30-128' strawberry in Feb 2020 at a farm near Wimauma, FL, USA.

rot (caused by *Macrophomina phaseolina*), Phytophthora crown rot (caused by *Phytophthora cactorum*), and Colletotrichum crown rot (caused by *Colletotrichum gloeosporioides* species complex) were described in Baggio et al. (2023), Seijo et al. (2011), Mertely et al. (2014a, 2014b), and Mackenzie et al. (2006). Natural disease incidence based on the percentage of fruit with observed symptoms was determined for powdery mildew (caused by *Podosphaera aphanis*) and Botrytis fruit rot (caused by *Botrytis cinerea*).

In all statistical analyses, blocks were considered fixed effects, and mean separations were only performed if genotype effects were significant. Residuals were examined for normality and homogeneity, and percentage data were modeled with GLIMMIX using logit link functions and binomial distributions.

Description

'FL 16.30-128' is a short-day strawberry adapted to annual plasticulture growing

systems for winter and early spring production. The plant is compact with upright architecture, allowing air movement and visualization of the fruit (Fig. 2). 'FL 16.30-128' produces moderately firm and juicy fruit that are broad conic in shape with a medium green (colorimeter L* = 48.1, a* = -17.0, b* = 24.4) calyx that is reflexed. The redness of the fruit is medium externally (a* = 38.6), with moderate internal redness (a* = 22.6) slightly more red than 'Florida Brilliance'. Fruit size is medium-large, with fruit size similar to 'Florida Brilliance' (Table 1).

Trained sensory panels were conducted on ten harvest dates over three seasons (Table 2). No trained sensory panel data were obtained during the 2020-21 and 2021-22 seasons due to COVID-19 restrictions. Firmness and "green" flavor were lower in 'FL 16.30-128' than in 'Florida Brilliance' in some weeks. Sweetness and strawberry flavor intensity ratings were usually not different from 'Florida127' but were sometimes significantly higher. This is consistent with high soluble solids content (SSC) similar to 'Florida127' (Table 3). However, 'FL 16.30-128' had higher titratable acidity (TA) than 'Florida127' on multiple harvest dates, providing a pleasantly balanced but intense flavor. DNA marker tests show that 'FL 16.30-128' carries two copies of FaFAD1 and thus produces higher quantities of the volatile γ -decalactone that contributes to fruity aroma in strawberry (Chambers et al. 2014; Jang et al. 2024; Oh et al. 2021; Porter et al. 2023). This gene is present in many of the UF cultivars including

Table 1. Marketable yield and average fruit weight of 'Florida Brilliance', 'Florida127', and Florida Medallion™ 'FL 16.30-128' strawberries evaluated at the University of Florida Gulf Coast Research and Education Center (GCREC) in Wimauma, FL, USA, over six seasons.

	Marketable yield (g/plant)							
Cultivar	November	December	January	February	March	Total	Wt/fruit (g)	
			2018-	-19				
FL Brilliance	21.4 a ⁱⁱ	118.9 a	140.9 a	558.3 a	173.5 a	1013 a	28.1 b	
Florida127	30.5 a	28.6 c	75.8 b	557.3 a	152.1 a	806.2 b	30.4 a	
FL Medallion	19.3 a	74.4 b	103.3 ab	390.8 b	114.1 b	740 b	26.6 b	
			2019-	-20				
FL Brilliance	4.3 b	104 a	180.7 b	436.3 a	180.7 a	905.8 a	22.4 c	
Florida127	8.3 a	80.2 b	259.8 a	446.7 a	141.3 b	936.2 a	27.3 a	
FL Medallion	4.2 b	93.6 ab	176.0 b	343.1 b	155.6 ab	772.4 b	24.0 b	
			2020-	-21				
FL Brilliance	3.2 b	48.8 a	114.2 a	473.1 b	189.5 a	1044.3 a	23.0 b	
Florida127	17.8 a	15.5 b	56.1 b	712.6 a	164.7 a	1078.8 a	29.1 a	
FL Medallion	15.3 a	40.6 a	120.5 a	368.7 c	130.0 b	839.0 b	24.0 b	
			2021-	-22				
FL Brilliance	3.4 b	79.1 b	372.6 b	553.9 a	145.1 a	1154.0 a	26.5 ab	
Florida127	7.0 ab	39.2 c	468.3 a	418.5 b	127.7 a	1060.7 a	28.7 a	
FL Medallion	12.6 a	126.4 a	264.7 c	344.4 b	88.8 a	836.9 b	24.1 b	
			2022-	-23				
FL Brilliance	15.9 a	78.2 b	185.5 a	592.5 ab	348.7 a	1220.7 a	24.6 b	
Florida127	22.6 a	66.7 b	162.0 a	534.1 b	203.8 b	989.2 b	28.2 a	
FL Medallion	0.3 b	101.1 a	193.6 a	640.7 a	181.1 b	1116.8 ab	23.7 b	
			2023-	-24				
FL Brilliance	14.2 ab	63.7 ab	189.4 a	478.2 a	107.7 a	853.2 a	24.4 b	
Florida127	17.5 a	52.1 b	196.6 a	355.7 b	62.6 b	684.5 b	28.2 a	
FL Medallion	9.2 b	71.0 a	181.5 a	361.0 b	80.7 ab	703.5 b	24.7 b	

Mean fruit weight was determined by dividing total marketable fruit yield per plot by total marketable fruit number per plot.

ii Mean separation within columns is by Tukey's honestly significant difference test, $P \leq 0.05$.

Table 2. Trained sensory panel ratings (0 to 10 linear scale, with increasing intensity) for 'Florida Brilliance', 'Florida127', and Florida MedallionTM 'FL 16.30-128' strawberries across 10 harvests over three seasons. Fruit samples from the same harvest and field replication were analyzed for chemical attributes, as shown in Table 3.

		_	_	Strawberry	Green/unripe
Cultivar	Firmness	Sweetness	Sourness	flavor	flavor
	:::	Jan 2019	, ,		
FL Brilliance	5.9 a ⁱⁱⁱ	4.7 b	5.1 a	3.7 b	2.0 a
Florida127	5.4 ab	4.3 b	4.3 a	4.2 a	1.8 a
FL Medallion	4.6 b	5.7 a	4.9 a	5.1 a	1.4 a
		Feb 2019	9 (n = 9)		
FL Brilliance	5.5 a	3.4 b	5.4 a	3.7 b	2.1 a
Florida127	4.9 a	4.9 a	3.9 b	4.5 b	1.7 a
FL Medallion	5.8 a	5.3 a	4.9 ab	5.1 a	1.4 a
		Mar 2019	$\theta (n = 8)$		
FL Brilliance	6.8 a	3.5 a	5.4 a	3.0 b	2.2 a
Florida127	5.6 b	4.3 a	5.6 a	4.0 a	1.8 ab
FL Medallion	5.7 b	4.5 a	5.0 a	4.1 a	1.2 b
		Dec 2019	θ (n = 9)		
FL Brilliance	6.7 a	3.9 b	5.3 a	3.8 b	2.5 a
Florida127	5.4 b	4.9 a	4.8 a	5.5 a	1.6 b
FL Medallion	3.9 c	5.7 a	5.7 a	5.8 a	1.6 b
		Jan 2020	(n = 9)		
FL Brilliance	4.5 a	5.5 a	3.3 a	4.7 a	1.0 a
Florida127	4.1 a	5.8 a	3.8 a	4.8 a	1.4 a
FL Medallion	4.2 a	5.9 a	3.9 a	5.1 a	0.8 a
		Feb 2020	(n = 10)		
FL Brilliance	4.5 a	4.1 a	5.0 a	3.8 a	1.3 a
Florida127	4.3 a	4.7 a	4.7 a	4.2 a	1.1 a
FL Medallion	4.6 a	5.0 a	5.4 a	4.2 a	1.0 a
		Mar 2020	0 (n = 9)		
FL Brilliance	6.3 a	4.7 a	4.6 a	4.0 a	1.1 a
Florida127	4.6 b	4.8 a	3.9 a	4.3 a	1.2 a
FL Medallion	5.4 ab	5.8 a	5.2 a	5.1 a	0.7 a
		Jan 2023	$(n = 11)^{ii}$		
FL Brilliance Florida127	4.0 a ⁱⁱⁱ	4.1 b	4.9 a —	4.0 b	1.2 a
FL Medallion	4.1 a	6.2 a	4.4 a	5.4 a	0.7 a
		Feb 2023	3 (n = 9)		
FL Brilliance Florida127	5.4 a	4.3 b	5.3 a	3.8 b	0.6 a —
FL Medallion	4.1 b	5.3 a	4.2 a	5.1 a	0.6 a
		Mar 2023	(n = 11)		
FL Brilliance	5.1 a	4.4 a	3.7 a	4.1 a	0.6 a
Florida127	_	_	_	_	_
FL Medallion	4.9 a	4.8 a	4.5 a	4.4 a	0.6 a

Number of trained panelists.

'Florida127' and 'Florida Brilliance' but previously only in the heterozygous state (single copy).

Field Performance

In replicated trials, November through January yields of 'FL 16.30-128' were similar to 'Florida Brilliance' but were typically lower in February and March (Table 1). Lower late-season yields are related to the smaller plant of 'FL 16.30-128' compared with the other commercial standards. An onfarm trial with a planting date of 25 Sep 2019 was established to test the suitability of Florida Medallion for early planting. In this

trial February and March yields were very similar to 'Florida Brilliance', likely because of higher fertilization rates and resultant larger plant size in the commercial trial (Fig. 3). This suggests that with appropriate management practices, 'FL 16.30-128' can achieve both high early yields and high total yields in addition to its premium flavor. 'FL 16.30-128' also maintained an exceptionally consistent conical shape throughout the entire season in all trials.

The disease resistance profile of 'FL 16.30-128' was comparable to that of 'Florida Brilliance' for *Neopestalotipsis*, foliar powdery mildew, Phytophthora crown rot, and Colletotrichum crown rot (Table 4). Although

Table 3. Soluble solids content (SSC), pH, titratable acidity (TA), and SSC/TA ratio for 'Florida Brilliance', 'Florida127', and Florida Medallion™ 'FL 16.30-128' strawberries across 16 harvests over five seasons.

				SSC/				
Cultivar	SSC (%)	pH	TA (%)	TA				
EX D '11'		2019	0.55	10.5				
FL Brilliance Florida127	8.09 b ⁱ	3.74 a 3.77 a	0.77 a 0.75 a	10.5 a 11.7 a				
FL Medallion	8.70 ab 9.88 a	3.67 a	0.75 a 0.84 a	11.7 a 11.8 a				
I E Wedamon		2019	0.014	11.0 u				
FL Brilliance	6.09 b	3.77 ab	0.59 b	10.4 b				
Florida127	7.39 ab	3.87 a	0.55 b	13.5 a				
FL Medallion	7.71 a	3.68 b	0.73 a	10.6 b				
Mar 2019								
FL Brilliance	5.62 b	3.73 a 3.81 a	0.61 b	9.2 b				
Florida127 FL Medallion	7.46 a 7.40 a	3.69 a	0.66 b 0.72 a	11.3 a 10.2 ab				
I E Wedamon		2019	0.72 u	10.2 40				
FL Brilliance	6.41 b	3.67 a	0.81 ab	7.96 a				
Florida127	8.68 a	3.82 a	0.72 b	12.13 a				
FL Medallion	8.38 a	3.69 a	0.87 a	9.67 a				
	Jan	2020						
FL Brilliance	8.43 a	3.67 a	0.82 a	10.56 a				
Florida127	9.09 a	3.63 a	0.86 a	10.54 a				
FL Medallion	9.78 a	3.73 a	0.73 a	13.39 a				
		2020						
FL Brilliance Florida127	6.14 b	3.76 a	0.56 b	10.87 a				
FL Medallion	7.62 a 7.84 a	3.75 a 3.68 a	0.61 ab 0.70 a	12.56 a 11.33 a				
		r 2020	0.70 4	11.00 u				
FL Brilliance	8.28 a	3.63 a	0.82 a	10.09 b				
Florida127	9.63 a	3.73 a	0.78 a	12.34 a				
FL Medallion	9.27 a	3.64 a	0.86 a	10.82 a				
	Jan	2021						
FL Brilliance	8.80 b	3.70 b	0.79 a	11.20 b				
Florida127	9.26 ab	3.77 ab	0.67 b	13.85 a				
FL Medallion	10.48 a	3.80 a	0.76 ab	13.82 a				
	Fet	2021						
FL Brilliance	6.49 b	3.70 b	0.64 a	10.09 a				
Florida127 FL Medallion	6.54 b 7.89 a	3.81 a 3.78 a	0.50 b 0.63 a	13.07 a 12.63 a				
I E Wedamon		r 2021	0.03 u	12.03 u				
FL Brilliance	6.30 b	3.75 a	0.60 ab	10.70 b				
Florida127	7.74 a	3.79 a	0.54 b	14.40 a				
FL Medallion	7.99 a	3.72 a	0.65 a	12.38 a				
	Jan	2022						
FL Brilliance	8.84 a	3.65 b	0.82 a	10.90 b				
Florida127	8.63 a	3.79 a	0.51 b	17.05 a				
FL Medallion	9.65 a	3.71 ab 2022	0.69 a	14.39 a				
EL D.::::			0.62 -	12 10 1				
FL Brilliance Florida127	7.68 b 9.26 a	3.76 ab 3.82 a	0.63 a 0.63 a	12.19 b 14.79 a				
FL Medallion	9.48 a	3.72 b	0.69 a	13.81 a				
	Ma	r 2022						
FL Brilliance	5.81 b	3.83 a	0.60 a	9.77 b				
Florida127	7.08 a	3.83 a	0.45 b	16.04 a				
FL Medallion	7.22 a	3.80 a	0.52 ab	14.02 a				
	Jan	2023						
FL Brilliance	7.23 b	3.66 a	0.80 b	9.16 a				
Florida127 FL Medallion	8.91 a	3.59 a	0.88 a	10.24 a				
		2023		u				
FL Brilliance	7.60 a	3.81 a	0.63 a	12.04 a				
Florida127	_	_	_	_				
FL Medallion	8.50 a	3.76 a	0.64 a	13.03 a				
	Ma	r 2023						
FL Brilliance	6.87 b	3.82 a	0.56 b	12.35 a				
Florida127								

¹ Mean separations within harvest dates and columns are Tukey's honestly significant difference test, $P \le 0.05$.

ii There are no trained sensory panel data for 2020-21 and 2021-22 seasons due to COVID-19 restrictions.

iii Mean separations within harvest dates and columns are Tukey's honestly significant difference test, $P \le 0.05$.

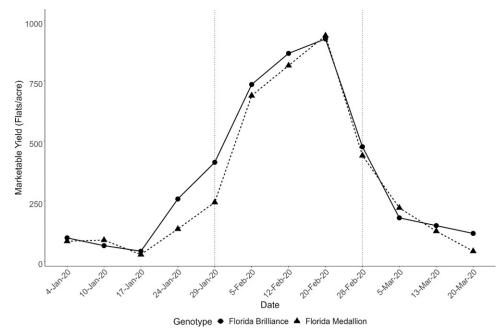


Fig. 3. Marketable yield of 'Florida Brilliance' and Florida Medallion™ 'FL 16.30-128' strawberries in a replicated on-farm trial (two replications with 250 plants per replication) near Wimauma, FL, USA, during 2020 season. Planting date: 25 Sep 2019. One flat equals eight 454 g plastic containers.

it is not an improvement, similarity to the commercial standard was considered acceptable. It had lower incidence of Botrytis fruit rot than both commercial standards, possibly due to its compact but upright plant architecture that enhances air movement around the blooms. The incidence of anthracnose fruit rot and mortality due to charcoal rot for 'FL 16.30-128' were higher than both commercial standards. This coincides

with DNA marker test results that show the absence of the resistant allele at the *FaRCa1* locus (Jang et al. 2024; Salinas et al. 2019) for anthracnose fruit rot resistance and at the *FaRMp1* locus (Jang et al. 2024; Nelson et al. 2021) for

Table 4. Disease incidence and mortality for 'Florida Brilliance', 'Florida127', and Florida Medallion™ 'FL 16.30-128' from field trials over five seasons. Incidence of anthracnose fruit rot (caused by *Colletotrichum acutatum*) and Botrytis fruit rot (caused by *Botrytis cinerea*) are based on twice-weekly fruit harvests. Severity of Pestalotia leaf spot (caused by *Neopestalotiopsis* spp.) and incidence of powdery mildew (caused by *Podosphaera aphanis*) during the 2019–20 season describe foliar symptoms only. Powdery mildew during 2022–23 season describes fruit incidence. Mortality due to Colletotrichum crown rot (caused by *Colletotrichum gloeosporioides*), Phytophthora crown rot (caused by *Phytophthora cactorum*) and charcoal rot (caused by *Macrophomina phaseolina*) were assessed at the conclusion of the harvest season or when mortality in highly susceptible individuals reached 75% or greater.

	Severity (0–6)	Incidence (%) ⁱ			Mortality (%)		
Cultivar	Neopestalotiopsis ⁱⁱ	Anthracnose fruit rot	Botrytis fruit rot	Powdery mildew	Colletotrichum crown rot	Phytophthora crown rot	Charcoal rot
			2019-	-20			
FL Brilliance	_	22.8 b ⁱⁱ	8.7 a	0.7 b	62.5 a	37.5 ab	7.5 b
Florida127	_	6.1 c	10.6 a	10.2 a	2.8 b	53.5 a	20.0 b
FL Medallion	_	77.2 a	2 b	2.9 b	62.5 a	27.5 b	90.0 a
			2020-	-21			
FL Brilliance	_	31.5 b	_	_	65.0 a	53.8 b	50.0 b
Florida127	_	13.1 c	_	_	35.0 b	67.5 ab	13.3 с
FL Medallion	_	72.1 a	_	_	15.0 c	80.0 a	85.0 a
			2021-	-22			
FL Brilliance	5.3 a	31.1 b	4.4 a	_	37.5 a	30.0 b	25.0 b
Florida127	4.1 a	18.5 c	3.4 a	_	17.5 b	72.5 a	32.5 ab
FL Medallion	4.1 a	80.5 a	0.5 b	_	15.0 b	27.5 b	52.5 a
			2022-	-23			
FL Brilliance	4.3 a	32.4 b	10.2 a	3.6 с	17.5 b	15.5 b	2.5 b
Florida127	4.0 a	10.5 c	9.7 a	38.8 a	20.3 b	100 a	9.5 b
FL Medallion	3.6 a	69.0 a	3.6 b	20.9 ab	22.5 b	53.3 a	42.5 a
			2023-	-24			
FL Brilliance	4.7 a	27.4 b	6.0 a	_	30.0 a	37.5 b	7.5 b
Florida127	_	8.2 c	10.4 a	_	12.1 a	87.5 a	25.0 b
FL Medallion	3.9 a	71.6 a	7.2 a	_	7.5 b	15.0 c	60.0 a

¹Disease from natural inoculum for powdery mildew and Botrytis fruit rot and artificial inoculations for all other diseases.

ii Neopestalotiopsis assessed through a 0 to 6 severity scale of foliar symptoms.

iii Means are based on four replications of 10 to 12 plants each. Mean separations within columns is Tukey's honestly significant difference test, $P \le 0.05$.

charcoal rot resistance. Thus, special attention to the management of these two diseases in Florida is necessary for 'FL 16.20-128' (MacKenzie and Peres 2007; Peres et al. 2018).

Commercialization

'FL 16.30-128' was approved for release by the Florida Agricultural Experiment Station in 2020. US Patent PP33,451 was granted in 2021. Plant breeder's rights applications have been filed in foreign territories. Information on nurseries licensed to propagate this cultivar can be obtained from Florida Foundation Seed Producers, Inc., P.O. Box 110200, Gainesville, FL 32611, USA (http://ffsp.net).

References Cited

- Agehara S, Hochmuth G. 2023. Fertilization of strawberries in Florida. EDIS. 2023(4). https:// doi.org/10.32473/edis-CV003-2023.
- Baggio JS, Rebello CS, de Morais MB, Marin MV, Gama AB, Forcelini BB, Mertely JC, Peres NA. 2023. Efficacy of single- and multi-site fungicides against *Neopestalotiopsis* spp. of strawberry. Plant Dis. 107(7): 2177–2184. https://doi.org/10.1094/PDIS-08-22-1929-RE.
- Chambers AH, Pillet J, Plotto A, Bai J, Whitaker VM, Folta KM. 2014. Identification of a strawberry flavor gene candidate using an integrated genetic-genomic-analytical chemistry approach. BMC Genomics. 15:217. https://doi.org/10.1186/ 1471-2164-15-217.
- Jang YJ, Oh Y, Verma S, Porter ME, Dalid C, Yoo CM, Fan Z, Willborn CW, Han K, Kim

- DS, Whitaker VM, Lee S. 2024. Updates on strawberry DNA testing and marker-assisted breeding at the University of Florida. Int J Fruit Sci. 24(1):219–228. https://doi.org/10.1080/15538362.2024.2365683.
- MacKenzie SJ, Legard DE, Timmer LW, Chandler CK, Peres NA. 2006. Resistance of strawberry cultivars to crown rot caused by *Colletotrichum gloeosporioides* isolates from Florida is non-specific. Plant Dis. 90(8):1091–1097. https://doi.org/10.1094/PD-90-1091.
- MacKenzie S, Peres N. 2007. Colletotrichum crown rot (anthracnose Crown Rot) of strawberries: PP 238 PP156, 6 2007. EDIS. 2007(18). Gainesville, FL, USA. https://doi.org/10.32473/ edis-pp156-2007.
- Mertely J, Seijo T, Martin R, Peres N. 2014a. Evaluation of chemical and biological treatments for charcoal rot control in annual strawberry. Plant Disease Management Reports. 8:SMF026. https://doi.org/10.1094/PDMR08.
- Mertely J, Seijo T, Martin R, Peres N. 2014b. Evaluation of products to control Phytophthora crown rot in annual strawberry, 2013–14. Plant Disease Management Reports. 8:SMF027. https:// doi.org/10.1094/PDMR08.
- Nelson JR, Verma S, Bassil NV, Finn CE, Hancock JF, Cole GS, Knapp SJ, Whitaker VM. 2021. Discovery of three loci increasing resistance to charcoal rot caused by *Macrophomina phaseolina* in octoploid strawberry. G3 Genes|Genomes|Genetics. 11(3). https://doi.org/10.1093/g3journal/jkab037.
- Oh Y, Barbey CR, Chandra S, Bai J, Fan Z, Plotto A, Pillet J, Folta KM, Whitaker VM, Lee S. 2021. Genomic characterization of the fruity aroma gene, FaFAD1, reveals a gene dosage effect on γ-decalactone production in strawberry

- (*Fragaria* × *ananassa*). Front Plant Sci. 12: 639345. https://doi.org/10.3389/fpls.2021. 639345.
- Peres NA, Baggio JS, Mertely JC. 2018. Charcoal rot of strawberries caused by *Macrophomina phaseolina*: PP242 PP161, Rev. 2 2018. EDIS. 2018(1). Gainesville, FL, USA. https://doi.org/10.32473/edis-pp161-2018.
- Plotto A, Baldwin J, Bai J, Narciso J, Whitaker VM, Chandler CK. 2013. Update on sensory evaluation of University of Florida strawberry selections. Proc Fla State Hortic Soc. 126: 247–250
- Porter M, Fan Z, Lee S, Whitaker VM. 2023. Strawberry breeding for improved flavor. Crop Sci. 63(4):1949–1963. https://doi.org/10.1002/csc2.21012.
- Salinas N, Verma S, Peres N, Whitaker VM. 2019. FaRCa1: A major subgenome-specific locus conferring resistance to *Colletotrichum acuta-tum* in strawberry. Theor Appl Genet. 132(4): 1109–1120. https://doi.org/10.1007/s00122-018-3263-7.
- Seijo T, Mertely J, Whitaker VM, Peres N. 2011. Evaluation of strawberry cultivars and advanced breeding lines for field resistance to anthracnose and botrytis fruit rots, 2009–10. Plant Dis Mgmt. https://doi.org/10.1094/PDMR05.
- Whitaker VM, Chandler CK, Peres N, Nunes MCdN, Plotto A, Sims CA. 2015. Sensation TM 'Florida127' strawberry. HortScience. 50(7): 1088–1091. https://doi.org/10.21273/HORTSCI. 50.7.1088.
- Whitaker VM, Peres NA, Osorio LF, Fan Z, Do Nascimento Nunes MC, Plotto A, Sims CA. 2019. 'Florida Brilliance' strawberry. Hort-Science. 54(11):2073–2077. https://doi.org/ 10.21273/HORTSCI14327-19.