

‘Early St. Ann’: A New Early Maturing Satsuma Mandarin

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‘Early St. Ann’ is the product of the LSU AgCenter’s citrus research program whose function is to develop fresh market lines of citrus cultivars such as navels, oranges, satsuma mandarins, and others with improved quality and production. ‘Early St. Ann’ is an improved quality, early maturing satsuma mandarin that ripens in early September to mid-October and should complement the market of early satsumas for commercial production. ‘Early St. Ann’ was field tested as ‘LA 3-33.’

Parentage

'Early St. Ann' is an open pollinated seedling of unknown parentage. It was selected in the 1980s from early work on seedlings planted in the late 1960s by the late Ralph Brown, the first superintendent of the Citrus Research Station.

Fruit Characteristics

'Early St. Ann' produces typical satsuma fruits that are oblate in shape and medium to large in size. Compared with 'Early Armstrong,' 'Early St. Ann' is significantly higher in both average fruit weight and yield per tree (Table 1). Fruit diameter is significantly greater than 'Early Armstrong' and slightly larger than that of 'LA Early.' Quality of 'Early St. Ann' is better than that of 'Early Armstrong' (Table 2). 'Early St. Ann' has light yellow, thin leathery skin with an attractive appearance. Skin or peel adherence is slight to moderate, but it maintains the easy peeling characteristics common to satsuma mandarins. Fruit puffiness ranges from none to slight. Flesh color is orange and a more intense orange than 'Early Armstrong.' Flesh is tender and melting, with easily separating segments. Fruit is considered seedless, but it may have an occasional seed. Taste and flavor are excellent, slightly acid, juicy, and an improvement to that of 'Early Armstrong.'

Table 1. Yield and fruit quality of early maturing satsuma cultivars

Cultivar	Average ^z		
	Yield lbs/tree	Fruit weight (gm)	Fruit dia. (in)
Early Armstrong-R ^y	91.8 c ^x	153.3 b	2.81 b
Early St. Ann-R	139.6 b	164.3 a	2.89 ab
Early St. Ann-S	199.8 a	170.5 a	2.97 a
Early St. Ann-C35	210.5 a	162.5 a	2.94 ab
Early St. Ann-C32	202.8 a	166.5 a	2.94 ab

^zAverage for 1993-2000.

^y Letter refers to rootstock which trees were budded on R = Rubidoux; S = Swingle; C35 = Citrange C35; C32 = Citrange C32.

^x Means followed by the same letter are not significantly different (DMRT .05)

Table 2. Fruit quality comparison on early maturing satsuma cultivars.

Cultivar	Average ^z				
	Soluble solids (%)	Rind thickness (mm)	pH	Juice (%)	Solids/acid ratio
Early Armstrong-R ^y	6.9 b ^x	2.57 ab	4.2 a	41.5 ab	12.8 c
Early St. Ann-R	7.3 ab	2.55 ab	4.4 a	40.4 ab	15.0 a
Early St. Ann-S	7.2 ab	2.78 a	4.4 a	40.2 ab	14.1 ab
Early St. Ann-C35	7.2 ab	2.52 ab	4.4 a	43.9 a	14.1 ab
Early St. Ann-C32	6.9 b	2.61 ab	4.3 a	37.9 b	13.9 b

^z Average for 1993-1999

^y Letter refers to the rootstock which trees were budded on R = Rubidoux; S = Swingle; C35 = Citrange C35; C32 = Citrange C32.

^x Means followed by the same letter are not significantly different (DMRT .05)

Foliage Characteristics

‘Early St. Ann’ leaves are dark green, large (3-4" long and 1-3" wide), lanceolate, tapering at base and apex with a thin petiole.

Tree Characteristics

‘Early St. Ann’ trees are medium in size, slightly larger than ‘LA Early,’ and very productive. Growth pattern is typical of that of satsuma mandarin in that it is spreading with drooping branches which are thornless. Fruit bud and blossom set are heavy and evenly distributed throughout the tree. Fruit matures early and has the required Louisiana commercial standard solid/acid ratio of 10:1 for legal sale quite early in the season (tables 3 and 4). The maturity range for ‘Early St. Ann’ (Table 5) indicates that harvest can begin in early September and occur to mid-October, slightly ahead of ‘Early Armstrong.’

Table 3. Solid/acid ratio comparison of early satsuma cultivars.

Cultivar	Average solid/acid ratio ^z									
	1993	1994	1995	1996	1997	1998	1999	2000		
Early Armstrong-R ^y	11.3 a ^x	9.4 b	12.0 b	-----	15.7 a	14.5 a	13.8 b	8.9 b		
Early St. Ann-R	12.6 a	11.4 a	14.7 a	-----	16.5 a	16.3 a	18.7 a	13.0 a		

^z Average of 4 replications/treatment.

^y Letter represents rootstock; R = Rubidoux.

^x Means followed by the same letter are not significantly different (DMRT .05)

Table 4. Comparison of fruit maturity stage of early satsuma cultivars.

Cultivar	Maturity evaluation factors			
	Soluble solids (%)		Solids/acid ratio	
	9/24/99	9/8/00	9/24/99	9/8/00
Early Armstrong-R ²	7.5	7.5	9.7	8.9
Early St. Ann-R	8.5	9.0	14.4	13.0

² Letter represents rootstock; R = Rubidoux.

Table 5. Maturity range of satsuma cultivars.

Cultivar	Harvest window											
	Sept				Oct				Nov			
	7	14	21	29	7	14	21	29	7	14	21	29
Early Armstrong	_____											
Early St. Ann	_____											
LA Early	_____											
Brown's Select	_____											
Owari	_____											

Recommendations

‘Early St. Ann’ has performed well for several years in experimental trials at the Citrus Research Station. This cultivar is intended to complement the early marketing of improved quality early satsuma mandarins and not to replace existing cultivars. Several factors warrant concern in the production of this cultivar: fruit is susceptible to brown rot just prior to harvest and requires control measures; the leaf footed plant bug is attracted to the fruit of this cultivar, thus scouting and monitoring are necessary to time sprays for control; and heavy fruit set can occur, which may result in small fruit size. ‘Early St. Ann’ has done well on various rootstocks and can be grown on *P. trifoliata* ‘Rubidoux,’ Swingle citrumelo, and Citranges C35 and C32. ‘Early St. Ann’ is recommended for commercial and home planting of early market satsumas in Louisiana’s citrus growing areas. Limited budwood will be available from the Citrus Research Station, 22193 Highway 23, Port Sulphur, LA 70083.



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