

'LA Early': A New Early Market Satsuma

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‘LA Early,’ a new early maturing satsuma mandarin cultivar, is a product of the citrus breeding program of the LSU AgCenter, whose function is to develop fresh market lines of citrus (navels, satsumas, and other cultivars) with improved quality, fruit characteristics, and production. ‘LA Early’ is a high quality satsuma mandarin that ripens in early September to mid-October. ‘LA Early’ was field tested as ‘LA 3-3.’

Parentage

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

Fruit Characteristics

'LA Early' produces medium to large satsuma fruit, oblate in shape with significantly higher yield per tree than 'Early Armstrong' (Table 1). The average fruit weight and diameter of 'LA Early' are slightly larger as compared with that of 'Early Armstrong.' 'LA Early' has a light yellow thin leathery skin with an attractive appearance. Skin adherence is slight to moderate, but it remains easy to peel. Fruit puffiness ranges from none to slight. Flesh color is orange, a slightly more intense orange than that of 'Early Armstrong.' Flesh is tender and melting, with easily separating segments. Fruit is considered to be seedless. Taste and flavor are excellent, with fruit being juicy, slightly acid, and having an overall quality that is an improvement over that of 'Early Armstrong' (tables 2 and 3).

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 a	2.81 a
LA Early-R	115.8 b	154.0 a	2.85 a
LA Early-S	167.5 a	164.2 a	2.90 a
LA Early-C35	159.8 a	161.8 a	2.87 a
LA Early-C32	176.4 a	160.3 a	2.88 a

^z Average 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	2.6 a	4.2 a	41.5 a	12.8 d
LA Early-R	7.4 a	2.4 b	4.3 a	41.5 a	14.8 ab
LA Early-S	7.4 a	2.4 b	4.4 a	43.2 a	14.0 abc
LA Early-C35	7.3 a	2.4 b	4.3 a	40.3 a	14.4 abc
LA Early-C32	7.0 b	2.4 b	4.3 a	43.8 a	13.6 c

^z Average for 1993-1999

^y Letter refers to rootstock which trees were buded 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

Leaves are dark green, large (3-4" long and 1-2" wide), lanceolate, tapering at base and apex with thin petiole.

Tree Characteristics

‘LA Early’ trees are medium in size but very productive. The growth pattern is similar to that of ‘Early Armstrong’ in that the tree is spreading with drooping thornless branches. Fruit bud and blossom set are heavy, with even distribution throughout the tree. Fruit maturity is early and not determined by skin color, thus having acceptable solid/acid ratio (10:1 ratio required for legal sale in Louisiana) quite early in the season (tables 3 and 4). Maturity evaluation (Table 5) indicates that ‘LA Early’ harvest can occur from early September into mid-October, slightly ahead of ‘Early Armstrong.’

Table 3. Solid/acid ratio comparison of early maturing 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		
LA Early-R	11.4 a	10.9 a	16.1 a	-----	16.9 a	16.1 a	17.4 a	12.4 a		

^z Average of 4 replications/treatment.

^yLetter represents rootstock; R = Rubidoux.

^xMeans 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 ^z	7.5	7.5	9.7	8.9
LA Early-R	8.5	8.0	14.6	12.4

^z 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												
LA Early												
Early St. Ann												
Brown's Select												
Owari												

Recommendations

‘LA Early’ has performed well for several years in experimental trials at the Citrus Research Station. This cultivar is not intended to replace any existing cultivar but is intended to complement the early market of good quality satsuma mandarins. Several factors warrant attention in production of this cultivar: fruit susceptible to brown rot just prior or during ripening and will require spray for control; fruit susceptible to attack from the leaf footed plant bug and will require scouting and control measures; and trees can set a heavy crop resulting in reduced fruit size. ‘LA Early’ has performed well on various rootstocks such as *P. trifoliata* ‘Rubidoux,’ Swingle citrumelo, and Citranges C35 and C32. ‘LA Early’ 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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