'Brown's Select': A New Midseason Satsuma Cultivar

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Additional index words. citrus, cultivar development, satsuma mandarin, *Citrus unshiu*

The major satsuma (*Citrus unshiu* Marc) cultivars grown in Louisiana are 'Early Armstrong' (harvested from late September to early October) and 'Owari' (harvested from late October into November). 'Early Armstrong' has poor fruit quality, but is the only early market-type satsuma available, making it commercially marketable. Once the 'Early Armstrong' harvest is completed, a market gap exists before the 'Owari' satsuma is available for harvest. Therefore, a productive satsuma cultivar with good fruit quality that would fill this gap is needed in Louisiana. 'Brown's Select' is a high-yielding satsuma type that can fill this market gap.

Origin

'Brown's Select' originated from a group of open-pollinated 'Kimbrough' (Brown et al., 1976) seedlings from seed collected at the Citrus Research Station (CRS) in the late 1960s and selected during postfreeze evaluations after 1983. 'Brown's Select' was field-tested at CRS as LA 4-40 and was named in honor of Ralph Brown, the former citrus researcher and superintendent of CRS from 1948 until his retirement in 1977.

Description

'Brown's Select' produces medium to large satsuma mandarin-type fruit that are oblate in shape with yellow to yellow-orange skin when mature (Fig. 1). The peel is generally smooth and separates easily from the flesh. Fruit keep well on the tree without becoming puffy. The flesh color, flavor, soluble solids concentration, and solids : acid ratio (Table 1) are similar to those of 'Owari' but superior to those of

'Early Armstrong'. Cernel walls are tender, and the juice sacks are melting and juicy. The fruit are considered seedless, but an occasional fruit will have one to two seed per fruit for every 10 fruit sampled. Leaves are large (8 to 10 cm long and 2.5 to 5.0 cm wide), lan-

ceolate, with the apex being tapered to sharp or slightly rounded with slender petioles having a slight winged margin.

'Brown's Select' trees are large, productive (Table 2), and have an open-spread branching pattern. Blossom set and fruit buds are prolific, with fruit concentrated in clusters on or along the branches. Harvest can begin from mid-October into early November.

'Brown's Select' has performed well in experimental trials for several years at CRS (Table 2). Yield data over 5 years indicate no significant difference in yield between 'Brown's Select' and 'Owari', even though the 'Brown's Select' trees were 2 years younger than the 'Owari' trees. The low yield in 1990 was due to the effects of a severe freeze in 1989. Surviving trees required heavy pruning and considerable tree regrowth, thus the reduction in yield. The difference in fruit qual-

Fig. 1. 'Brown's Select' satsuma.

Table 1. Fruit quality evaluation of 'Brown's Select' and other satsuma cultivars, 1991–92.

Cultivar/location ¹	Harvest date	Fruit diam ² (cm)	Fruit wt (g)	Soluble solids concn (%)	Solids : acid ratio
1991					
Early Armstrong (CRS) ³	6 Oct.	---	---	6.2	10.9
Owari (CRS)	17 Oct.	---	---	8.0	11.3
Brown's Select (CRS)	17 Oct.	---	---	9.0	11.4
Brown's Select (HRS)	25 Oct.	---	---	9.0	13.0
Kimbrough (HRS)	25 Oct.	---	---	9.0	11.6
1992					
Early Armstrong (CRS)	7 Oct.	6.9	127	6.1	10.8
Owari (CRS)	13 Oct.	6.02	93	8.0	11.4
Brown's Select (CRS)	13 Oct.	6.65	112	9.0	11.7
Kimbrough (HRS)	4 Nov.	6.32	104	9.5	13.3
Brown's Select (HRS)	4 Nov.	6.71	120	10.0	17.1
Brown's Select (CRS)	4 Nov.	7.14	123	8.5	13.1

²Average five fruit per sample.

³CRS = Citrus Research Station, located ≈35 miles southeast of New Orleans; HRS = Hammond Research Station, located ≈60 miles north of New Orleans.

⁴All cultivars were propagated to *Poncirus trifoliata* 'Rubidoux' rootstock, and tree age is 7 to 9 years.

Received for publication 29 Oct. 1993. Accepted for publication 9 Nov. 1994. Approved for publication by the Director of the Louisiana Agricultural Experiment Station as manuscript no. 93-82-7308. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked advertisement solely to indicate this fact.

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Table 2. Five-year yield evaluation of 'Brown's Select' and 'Owari' satsuma, Citrus Research Station, Port Sulphur, La.

Cultivar ^a	Yield (kg/tree) ^c					Mean
	1988	1989	1990	1991	1992	
Owari	66.1 a ^x	26.7 a	6.0 a	59.9 a	127 a	57.3 a
Brown's Select	14.2 b	5.4 b	4.0 a	51.5 a	134 a	41.6 a

^aMeans of 32 trees each for 'Owari' and 'Brown's Select' on *Poncirus trifoliata* 'Rubidoux' rootstock.

^x'Owari' trees were 9 years old in 1992, 'Brown's Select', 7 years.

^cMean separation within columns by F test, $P \leq 0.05$.

ity, especially the solids : acid ratio between fruit produced at CRS and at the Hammond Research Station (HRS), can be attributed to the climate, i.e., HRS is colder earlier during

the harvest season than CRS. Thus, the ripening process is advanced, resulting in a higher solids : acid ratio when the fruit is tested for quality. 'Brown's Select' is recommended for

commercial plantings in Louisiana's citrus-growing region as a midseason satsuma cultivar.

Availability

Limited budwood will be available from the Citrus Research Station, Rt. 1, Box 628, Port Sulphur, LA 70083.

Literature Cited

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