



Evaluation of Satsumas in the Wintergarden

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BOTTOM LINE

● New Satsuma varieties look promising as to cold hardiness, production and fruit quality as an alternative crop for the Wintergarden.

Introduction

Satsumas are one of the most cold hardy citrus varieties with sufficient fruit quality for potential marketing as an alternative crop in the Wintergarden. Typically, mature acclimated trees can take temperatures in the mid-teens to low 20s without damage. There were sizeable acres (800) of trees in this region prior to the freezes of '89 and '83. New varieties of Satsumas were obtained by Jerry Parsons directly from Japan for evaluation in southwest Texas. This study was set up to evaluate these new varieties as to fruit quality and cold hardiness in an attempt to re-establish this industry as an alternative crop in the Wintergarden.

Experimental Approach

Trees for planting at the TAMU Center in Uvalde were propagated on their own roots and on sour orange. In addition, one variety was grown on trifoliolate rootstock. Trees were planted at the Center on 15 May 1996. Trees were spaced 10 feet apart in the row with the rows 20 feet apart. Plants were hand watered in

and later drip irrigation was installed. Trees were protected using a "dry" cedar mulch in the winters of '96 and '97. The entire trees were covered with this mulch these 2 years. In '98 the trees were not covered and a low of 16°F was recorded. Some leaves were lost, but for the most part the wood was not damaged. Trees were not hurt by 20 and 21°F in January '99. The trees set their first crop in '99, followed by crops in 2000 and 2001. Little if any pest management has been needed to date, although there were early tree losses to termites and cut ants. Weekly irrigation and good weed control has been the main management to date. Fruit were harvested on a per tree basis with yields recorded in pounds per tree.

Results and Discussion

The yields for '99, '00 and '01 are presented in Table 1. The trifoliolate rootstock seemed to induce flowering and fruit set as these trees set the most fruit earliest. However, trees on this rootstock were apparently hurt by the cold (20 and 21°F in '99) and the tops of the trees died back and no fruit has been produced since '99. Trees on sour orange were the second most precocious trees in the study and have produced the largest and most productive trees. Own rooted trees produced their best crop to date this past year. Miho on sour orange has produced the most fruit and Seto on sour orange has been very consistent.

Fruit quality has been variable due to the vegetative nature of the trees. Fruit quality was the best in 2001. Seto and Miho, regardless of rootstock had the best fruit quality in 2001. Fruit quality should continue to improve as the trees age. Total production was 2390.3 lbs. in 2000 and 2250.3 lbs. in 2001.

New Satsuma varieties look promising as to production, fruit quality and cold hardiness. Studies continue for the next five years to further evaluate fruit quality and production.

Table 1. Yields of the Satsuma variety trial planted at the TAMU Center in Uvalde.

Variety ¹	Average yield-lbs/tree by year		
	1999	2000	2001
Mr. Mac/S.O.	14.6	266.6	28.8
Kimbrough/T.	8.0	0.0	0.0
Kimbrough/S.O.	9.1	200.2	70.7
Okitsu/S.O.	3.9	88.7	137.3
Miho/S.O.	2.4	124.3	162.8
Seto/S.O.	0.5	84.8	83.4
Seto/own	0.0	16.5	76.0
Miho/own	0.0	3.0	31.8
Okitsu/own	0.0	0.0	1.0

¹S.O. = Sour orange, T = trifoliolate and own = own