

most desired by consumers in the United States. Percentage red overcolor was at least 80% for all cultivars except 'FlordaRio' (i.e., 75%), 'Sunmist' has been patented as the first low chill white-fleshed nectarine due to its excellent aroma and flavor. A round to slightly oblong fruit shape is optimum, and ratings were lowered by excessively oblong shapes or by prominent tips or sutures. Fruit with flesh ripening evenly from flesh to pit, no evidence of premature tip softening, and retention of good firmness after harvest are rated high in firmness. All cultivars have been rated a 9 in firmness, with the exception of 'Sunsplash' (8). Fruit with high aroma, moderate acidity, and high sugar content are rated highest in taste. All cultivars were rated at least 8 in taste. Flesh browning, assessed by the degree of browning of cut fruit surfaces overnight, varied from 6 ('Sunblaze') to 9 ('Flordadawn', 'Flordacrest' and 'FlordaRio'). Overall attractiveness, which takes into account all the previously mentioned variables of fruit attractiveness, (i.e., size, color, shape, flesh browning) varied from 8 to 9 for all cultivars.

In conclusion, the high value of early season peach and nectarine cultivars is justification for trial in northern central and northern Florida. The most important factor enhancing the probability of success in the culture of peaches and nectarines in the southeastern United States is the selection of a site with good air drainage (such as hill tops) to minimize the likelihood of frost injury. The greatest single determinant of geographic (i.e., latitude) adaptability for a given peach or nectarine cultivar is chilling requirement. Cultivars adapted to northern central Florida have a chilling requirement of

225 to 300 cu; cultivars adapted to northern Florida have a chilling requirement of 300 to 500 cu. Varying fruit development periods also provide for a range in ripening dates at each location. For example, in northern Florida continuous peach production can occur from 20 Apr. to 1 June by selecting the following cultivars (presented in the order of ripening): 'Flordadawn', 'Flordaglobe', 'Flordaking', 'Flordacrest', and 'FlordaRio'. The nectarines 'Sundollar', 'Sunsplash', and 'Suncoast' provide north Florida growers with continuous production for about 3 weeks beginning ca. 1 May. It is anticipated that the acreage of many of these cultivars will increase in the near future.

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Proc. Fla. State Hort. Soc. 107: 333-334. 1994.

MANGOS IN THE UNITED STATES: A YEAR LONG SUPPLY

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Abstract. The consumption of mangos has increased greatly in the United States in the last decade. In order to meet this demand, mangos have been imported from Latin American countries to complement the production from Florida, particularly following the destruction of much of the local production by Hurricane Andrew. Mangos are currently being imported from Mexico, Brazil, Venezuela, Peru, Ecuador, Guatemala, Nicaragua, Puerto Rico, and Haiti throughout the year. 'Tommy Atkins', 'Haden', 'Kent', and 'Keitt' are the major cultivars imported. At this point in time the American consumer is starting to recognize cultivars. External appearance, especially color is the main concern. J.R. Brooks feels that, with time, consumers will start being more aware of the different cultivars based on their specific characteristics such as taste and shelflife, and not only external color. By paying attention to competition from these sources, Florida growers may benefit from the increased exposure being enjoyed by mangos in the U.S. market.

Mango is not an exotic fruit anymore. Consumption in the United States has been rising over the last few years, having almost tripled since 1980, and almost doubled since 1990 (1). However, mangos remain a heavily ethnic item, mostly purchased by hispanics, and orientals to a lesser extent. Many customers in the United States still do not know mangos. Customer education, aggressive promotion and demonstrations could reach other ethnic groups and make mangos a mainstream item.

Consumers are mainly concerned with the appearance of the fruit and the shelflife. In ethnic markets, where they are more familiar with the different cultivars and their quality, appearance is not the main concern. In time, the market will become more sophisticated and will learn to recognize the different cultivars as with apples.

In order to enter the United States, mangos have to go through a hot water treatment at the country of origin under the supervision of Animal and Plant Health Inspection Service (APHIS) personnel. The hot water treatment facilities have to be certified every year, and in order for them to be approved, they have to meet several requirements. The treatment can cause damage to the fruits if not done correctly, or if the fruit are not picked at their proper physiological matu-

Table 1. The number of certified hot water treatment plants.

Country	1990	1991	1992	1993	1994
Venezuela	0	0	1	2	3
Nicaragua	0	0	0	0	1
Guatemala	0	0	0	1	2
Mexico	45	41	42	47	51
Brazil	1	2	3	3	4
Ecuador	0	1	1	1	2
Peru	0	2	4	4	4
Haiti	5	5	5	5	5

ity. Table 1 shows the situation of the hot water facilities in Latin America.

The mangos consumed in the United States are from Florida and Latin American countries (Table 2). In the last five years, mango imports provided about 85 percent of total U.S. mango supplies (1). Mexico is by far the major supplier, and its exports are expected to increase every year. The number of certified packing houses are also increasing (Table 1). Mangos from Mexico have a variable quality, as should be expected since there are so many treatment facilities in that country. Usually the quality is good; most treatment facilities are able to keep hot water damage to a minimum. The major quality problem observed at our packing house was due to advanced fruit maturity, which leaves the packer/shipper with a short time to get the product to the customer. Their major

Table 2. Volume of United States imports.

Origin	Volume of Imports ¹				
	1990	1991	1992	1993	1994
Venezuela	0	0	583,100	625,900	—
Nicaragua	0	0	0	0	38,497
Guatemala	0	0	0	150,000	448,500
Mexico	11,229,000	16,861,200	15,167,556	21,113,600	—
Brazil	37,000	228,200	377,200	697,300	—
Ecuador	0	25,000	59,000	70,000	—
Peru	0	481,000	669,800	606,300	—
Haiti	1,735,300	2,986,200	61,550	1,584,440	—
Florida	1,925,000	2,750,000	2,200,000	275,000	—

¹Number of 4.5 Kg (10 Lb) boxes.

Table 3. Distribution of the mango supply throughout the year by country.

Origin	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Venezuela												
Nicaragua												
Guatemala												
Mexico												
Brazil												
Ecuador												
Peru												
Haiti												
Florida												

cultivar is Tommy Atkins, but they also ship significant amounts of 'Kent', 'Haden', and 'Keitt'.

Nicaragua and Guatemala are the most recent suppliers. The quality of the fruit from these countries is good, and hot water damage was minimal in the lots observed. The cultivars sent were 'Tommy Atkins' and 'Sensation'. Fruit from Venezuela are of variable quality. Hot water damage is a great problem with the fruit received in our packing house. The major cultivars received were 'Haden'. Brazil sends only 'Tommy Atkins' and in the beginning of the season hot water damage is a problem on the smaller fruits but for the most part fruit quality is good. Peru and Ecuador have good quality fruit. Hot water damage is a problem occasionally.

The volume of mangos entering the United States is bound to increase in the coming years. The limiting factor will be price. The market is reaching a point where a steady supply is available (Table 3), which will keep prices more stable, making mangos more popular among American consumers. Florida has a distinctive advantage over other suppliers. It is closer to the market and the fruits do not need to be submitted to any kind of treatment to be commercialized in most American states. Florida could also grow cultivars for specialty markets which do not take the hot water treatment well.

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Proc. Fla. State Hort. Soc. 107: 334-337. 1994.

EFFECTS OF MUNICIPAL SOLID WASTE COMPOST AND TRENCH DEPTH ON PAPAYA (*CARICA PAPAYA* L.) YIELD AND FRUIT QUALITY

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Additional index words. Papaya yield, precocity, total soluble solids, fruit acidity.

Abstract. The effects of application rate of municipal solid waste (MSW) compost and trench depth on yield and fruit quality were determined for papaya (*Carica papaya* L. cv. Cariflora) grown in Krome very gravelly loam soil. Plants were cultivated in soil amended with Earthlife Compost (composted trash) at a rate of 0, 75, or 150 Mg · ha⁻¹, and trenched to a depth of 0, 12.7, 25.4, or 38.1 cm. All plants were supplied with adequate fertilizer and irrigation. There was a significant interaction between MSW rate and trench depth only for average fruit weight. When MSW was applied at 75 Mg · ha⁻¹, average fruit weight was negatively correlated with trench depth. A similar trend was ob-

Florida Agricultural Experiment Station Journal Series No. N-00944.

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