Citrus Scion Cultivars in Florida and Texas

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The commercially important cultivars vary among citrus-production areas with such factors as climate, soils, and marketing methods. The purpose of this report is to list major scion cultivars by quantity and relative age in Florida and Texas. The number of trees is the most useful comparison, because the average number of trees per acre varies with the cultivar and production area. Trees are divided into four age groups. In Florida, citrus trees 1-4 years old are considered nonbearing; however, the Texas tree inventory groups trees 1-3 years old and does not specifically list data on 4-year-old trees. Florida trees are arranged in similar age groups for comparison. The latest tree inventories are for January 1978 in Florida (1) and January 1979 in Texas (3).

The most important citrus in Florida is the sweet orange [*Citrus sinensis* (L.) Osb.], which comprises 73.5% of the total trees. The major Florida orange cultivars are shown in Table 1. Hamlin, Parson Brown and navels are considered early oranges (about 14.5 million trees). Pineapple and seedlings are midseason oranges (about 10 million trees), whereas most of the late oranges (23.6 million trees) are Valencia. The total number of Florida orange trees is 50.8 million. The average number of orange trees per acre in Florida is 83. During the five seasons 1974-75 through 1978-79 in Florida, an average acre of bearing orange trees produced 13.3 tons of fruit per season, of which 93% were processed and 7% were marketed fresh (2). This was 78.6% of the total U.S. orange production. During the same period, the average per-acre orange production in California was 9.1 tons, in Texas 8.7 tons, and in Arizona 6.4 tons.

An inventory of Florida grapefruit (*C. paradisi* Macfad.) trees (Table 2) shows that Marsh is the most extensively planted cultivar. Redblush (Ruby) and Thompson are reported together as pink seedless in Florida records, although the former cultivar is more extensively planted. About 14% of Florida grapefruit cultivars have seedy fruit. There are 10.4 million grapefruit trees planted in Florida, an increase of 1.5 million trees since 1969. During the past five seasons, 62% of Florida grapefruit was processed. The average acre of Florida grapefruit had 76 trees. In Florida, average yield of grapefruit per acre of bearing trees was 17.5 tons. Grapefruit yields in California were 13.5 tons per acre, in Texas 11.6 tons, and in Arizona 9.1 tons. From 1974-75 through 1978-79, Florida produced 74% of the U.S. grapefruit crop.

There are 1.6 million Temple (*C. reticulata* hybrid) trees planted in Florida (Table 3). Sixty percent of the Temple fruit is processed. About 1.7 million tangelo (hybrids of *C. reticulata* Blanco and *C. paradisi*) trees are planted in Florida. Orlando is the major cultivar, followed by nearly equal numbers of Nova and Minneola. Fifty-six percent of the tangelo fruit is processed. K-Early, a hybrid of unknown parentage but similar to tangelos, accounts for 113,000 trees, most of which are older than 12 years.

The number of Dancy (*C. reticulata*) tangerine trees (Table 4) exceeds that of Robinson [*C. reticulata* X (*C. paradisi* X *C. reticulata*)]. Most of the Dancy trees are older than 12 years, whereas most of the Robinson

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trees are younger than 12 years. Fruit of these cultivars are harvested during the fall to early winter, and about 35% is processed. Most of the 900,000 Murcott Honey (*C. sinensis* X *C. reticulata* hybrid?) tangerine trees are more than 12 years old. Murcott Honey fruit matures later than other tangerines. During an average season 48% of Murcott Honey fruit is processed, and 52% is marketed fresh. Separate data for Page, Lee, and Osceola, hybrids of tangerine and tangelo, are not available. However, Page is the most extensively planted, followed by Lee and a small quantity of Osceola. There are 96,200 satsuma (*C. reticulata*) mandarin trees and 13,800 Ponkan (*C. reticulata*) trees in Florida.

Florida groves contain about 791,000 lime trees (Table 5), and nearly all are Tahiti (Persian), *C. aurantiifolia* (Christm.) Swingle. Most of the 530,000 true lemon trees in Florida are Bearss, *C. Limon* (L.) Burm, f.; there are 241,000 Meyer (*C. limon* X *C. sinensis*?) lemon trees. Most of the Meyer trees are more than 12 years old.

Table 1. Numbers of Florida orange trees by cultivar and age as of January 1978.[1]

Age (yrs.)	Hamlin	Parson Brown	Navel	Pineapple	Seedling	Late (Valencia)	Total[3] oranges
				(1,000 trees)			
1-3	275.1	2.2	37.8	150.8	0.1	566.0	2,664.9
4-8	879.1	83.3	70.8	872.6	1.6	1,591.9	3,568.9
9-12	1,496.2	130.4	218.2	1,424.3	4.1	2,799.8	6,090.8
12+	8,525.9	2,216.1	593.8	7,174.8	462.6	18,662.9	38,518.6
Total	11,176.3	2,432.0	920.6	9,622.5	468.4	23,620.6	50,843.2

[1]Source: Commercial Citrus Inventory, Florida Crop and Livestock Reporting Service, Orlando, FL.
[2]Includes some unidentified trees, mostly nonbearing.

Table 2. Numbers of Florida grapefruit trees by cultivar and age as of January 1978.[1]

Age (yrs.)	Marsh seedless	Pink[2] seedless	Seedy[3]	Unidentified	Total grapefruit
			(1,000 trees)		
1-3	103.2	198.1	15.9	568.1	885.3
4-8	883.4	898.6	94.5	12.2	1,888.7
9-12	1,471.7	556.6	138.6	0.5	2,167.4
12+	2,810.6	1,463.6	1,190.6	6.3	5,471.1
Total	5,268.9	3,116.9	1,439.6	587.1	10,412.5

[1]Source: Commercial Citrus Inventory, Florida Crop and Livestock Reporting Service, Orlando, FL.
[3]Mostly Redblush (Ruby), but some Thompson.
[3]Predominantly Duncan, but a few foster and triumph.

Table 3. Inventory of Florida Temple, tangelo, and K-Early trees by cultivar and age as of January 1978.[1]

Age (yrs.)	Temple	Orlando tangelo	Minneola tangelo	Nova tangelo	All tangelos	K-Early
			(1,000 trees)			
1-3	7.9	7.5	7.6	1.1	16.2	0.4
4-8	69.8	46.0	4.4	63.6	131.5	0.9
9-12	219.3	357.0	52.7	125.6	543.6	13.1
12+	1,348.5	873.3	124.4	11.9	1,022.0	98.6
Total	1,645.5	1,283.8	189.1	202.2	1,713.3	113.0

[1]Source: Commercial Citrus Inventory, Florida Crop and Livestock Reporting Service, Orlando, FL.

Nearly 200,000 trees of miscellaneous cultivars are planted in Florida.

In January 1978, the total number of citrus trees in Florida was 69,136,800, and 71% were more than 12 years old. These occupied 831,235 acres, a gross decrease of 5.8% in acreage since the 1976 inventory. Acreage and tree count have continually decreased since 1969, when the inventory indicated 76.7 million trees (941,471 acres). During this 9-year period grapefruit trees increased by 1.5 million, but orange trees decreased by 7 million and other cultivars by 2 million, for a net decrease of 7.6 million trees. Trees were lost to freezes and diseases, urban development, and abandonment. These factors combined with poor fruit prices to discourage replanting and replacment of missing trees. Fruit prices have been higher since the last tree census, and tree and grove replacement has increased substantially.

The average Florida citrus crop during the five seasons 1974-75 through 1978-79 was 10.73 million tons of fruit (2). For comparison, the average California citrus crop during this period was 2.74 million tons. Nearly all of the 1979-80 crop has been harvested, and the total has been estimated at about 12.4 million tons, the largest Florida citrus crop ever harvested (estimate as of June 11, 1980, by Florida Crop and Livestock Reporting Service).

Data on tree spacing in Florida are not available. However, number of trees per acre has increased in many recent plantings. Only 29% of the trees are less than 12 years old. The average numbers of trees per acre by type in 1969 and in 1978, respectively, are: oranges, 80 and 83; grapefruit, 71 and 76; other types, 97 and 100; and all types, 81 and 83.

The major type of citrus in Texas is grapefruit (62% of the total acreage).

Table 4. Inventory of Florida tangerine, tangerine hybrid, and mandarin trees by cultivar and age as of January 1978.[1]

Age (yrs.)	Dancy tangerine	Robinson tangerine	Murcott Honey tangerine (1,000 trees)	Page, Lee, and Osceola hybrids[2]	Satsuma mandarin
1-3	14.0	11.4	12.5	0.0	0.0
4-8	29.2	187.3	24.5	25.3	0.9
9-12	105.6	241.3	178.9	72.0	19.9
12+	712.4	222.6	686.5	19.8	75.4
Total	861.2	662.6	902.4	117.1	96.2

[1]Source: Commercial Citrus Inventory, Florida Crop and Livestock Reporting Service, Orlando, FL.
[2]Predominantly Page, followed by Lee and a few Osceola trees.

Table 5. Inventory of Florida limes, lemons, and miscellaneous citrus and of all citrus by age as of January 1978.[1]

Age (yrs.)	Limes[2]	True[3] lemons	Meyer lemons (1,000 trees)	Misc. citrus	All citrus
1-3	207.4	79.9	8.8	4.0	3,912.7
4-8	102.9	142.8	5.4	11.1	6,180.0
9-12	224.5	161.2	21.3	28.4	10,088.0
12+	256.1	146.3	205.7	150.2	48,956.1
Total	790.9	530.2	241.2	193.7	69,136.8

[1]Source: Commercial Citrus Inventory, Florida Crop and Livestock Reporting Service, Orlando, FL.
[2]Predominantly Tahiti (Persian).
[3]Predominantly Bearss.

The inventory of grapefruit (Table 6) shows that Ruby Red is the predominant cultivar with nearly 4.7 million trees, 83% of Texas grapefruit. More than 600,000 Star Ruby trees were planted during the past 12 years. The numbers of pink (Thompson) and white (Marsh) grapefruit trees are about equal, 178,000 and 171,00, respectively. The 5,643,100 grapefruit trees in Texas include an increase of about 6% since 1977. The average Texas grapefruit tree is younger than the same in Florida. An average acre of Texas grapefruit contains 118 trees (3) compared to 76 in Florida. Trees planted during the past 12 years have an average density of 136 per acre. During the past five seasons, 43% of the Texas grapefruit crop has been processed and 57%, marketed fresh.

The inventory of Texas oranges is divided into two types (Table 7). The early cultivar is predominantly Marrs, and midseason cultivars are predominantly Pineapple, Jaffa, and Joppa. These cultivars are collectively assessed at 1.9 million trees. There are 1.1 million Valencia orange trees in Texas. The total number of orange trees in Texas is 3,025,200 as of January 1979, a reduction of less than 1% since the 1977 inventory. An average acre of orange grove in Texas contains 108 trees compared to 83 in Florida. The average number of trees planted per acre during the past 12 years is 131. During the past five seasons, 52% of the Texas orange crop has been processed and 48% has been marketed fresh.

The total number of Texas citrus trees was 8,713,100, which were planted on 76,300 acres. Since 1977, the total number of trees has increased by 4% and net acreage by 3%. The average citrus crop in Texas during the five seasons 1974-75 through 1978-79 was 665,800 tons (2).

SUMMARY

The major type of Florida citrus is the sweet orange, followed by grapefruit. In Texas, the order of impor-

Table 6. Inventory of Texas grapefruit trees by cultivar and age as of January 1979.[1]

Age (yrs.)	Ruby Red	Star Ruby	Pink[2] (1,000 trees)	White[3]	All grapefruit
1-3	861.0	230.8	5.9	1.6	1,099.3
4-8	998.2	337.6	13.1	9.8	1,358.7
9-12	925.6	35.2	26.1	17.5	1,004.4
12+	1,905.0	0.0	132.9	142.8	2,180.7
Total	4,689.8	603.6	178.0	171.7	5,643.1

[1]Source: 1979 Texas Citrus Tree Inventory, Texas Crop and Livestock Reporting Service, Austin, TX.
[2]Predominantly Thompson.
[3]Predominantly Marsh.

Table 7. Inventory of Texas orange trees by cultivar and age as of January 1979.[1]

Age (yrs.)	Early and midseason[2]	Valencia	Total oranges (1,000 trees)	All citrus
1-3	25.9	7.8	33.7	1,130.0
4-8	319.5	86.1	405.6	1,764.3
9-12	478.6	171.2	649.8	1,654.2
12+	1,077.3	858.8	1,936.1	4,116.8
Total	1,901.3	1,123.9	3,025.2	8,713.1[3]

[1]Source: 1979 Texas Citrus Tree Inventory, Texas Crop and Livestock Reporting Service, Austin, TX.
[2]Early cultivar predominantly Marrs, midseason predominantly Pineapple, Jaffa, and Joppa.
[3]Includes 44,800 trees of lemons, limes, tangelos, and tangerines of unspecified ages.

tance is reversed. Although total number of citrus trees has gradually decreased in Florida, the number of grapefruit trees has increased since 1969. In Texas, the number of grapefruit trees has increased between 1977 and 1979, and the number of orange trees has decreased slightly. Commercial citrus production (oranges, grapefruit, Temples, tangelos, tangerines, limes, lemons, and others) is more varied in Florida than in Texas. Consequently, more cultivars are grown in Florida. The trend toward greater planting density is evident in data from recent years in both states.

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Plum and Prune Cultivar Situation in the West Coast of North America

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INTRODUCTION

Plums and prunes are the 4th most important deciduous tree fruit crop of the west coast. In 1979 they were surpassed in production only by apples, peaches, and pears (1). The term "prune" describes *P. domestica* (European plum) cultivars which can be dried without fermenting at the pit. Fruits of several prune cultivars are dual purpose, being shipped fresh or canned as well as dried. Other European plums are used for purposes other than drying, such as for fresh consumption, canning, freezing, and crushing. *P. salicina* (Japanese plums) are widely grown in California, mainly for fresh consumption.

PRODUCTION AND ACREAGE

California is the major producer of plums and prunes in the United States, accounting for 87% of these fruits produced in 1979 (1). In 1978, 154,000 tons of plums were produced (Table I) (2). The yield per acre for plums has increased from 2.2 tons in 1935 to 4.4 tons in 1968 and 6.4 tons in 1979. The number of bearing acres of plums has increased slightly from 24,000 acres in 1946 to 27,400 acres in 1979, with year-to-year fluctuations (3). Plum production in Placer, Solano, Sacramento, and San Joaquin Counties has steadily declined from 47% in 1944 to 2% of California's total in 1979, while production has increased in Fresno and Tulare Counties from 30% in 1944 to 90% of California's total in 1979 (3). The major plum-producing area is now in the southern San Joaquin Valley counties of Fresno, Tulare, Kern, Madera, and Kings.

California prune production in 1978 was 132,000 tons (Table I) (1). For the season of August 1978 to July 1979, 85,000 tons of dried prunes were shipped domestically and 46,000 tons were exported (4). Domestic use was juice and concentrate (45%), dried prunes (36%), pitted prunes (14%), canned (3%), baby food (<1%), and puree (<1%). Production per acre has increased from 1.8 tons per acre in 1965 to 2.2 tons per acre in 1977. In 1969,

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