

## Commodity Highlight

### ***Tangerines: The Easy-Peel Citrus***

Tangerines, also known as mandarins, are said to have originated in Asia, around southern China, Indochina, and Japan. There are numerous varieties, with varying shapes and color. The tangerines are distinguished from other citrus fruit by their loose peel and easy-to-separate sections. These features have increased the popularity of the fruit in recent years and given them the nickname easy peelers.

Tangerine varieties differ around the world. There are several different groupings of tangerines, including: satsumas, clementines, and other tangerine hybrids. An example of a satsuma is the Unshui, the most popular variety in Japan. Clementines are the most popular variety grown in the Mediterranean region. Other tangerine hybrids are popular in China and the United States and include the Ponkan, grown in China, and the Fallglo and Sunburst, grown in Florida. Tangerine hybrids also include the tangelo, a cross between a tangerine and a grapefruit, and the tangor, a cross between a tangerine and an orange.

### ***China Leads the World in Tangerine Production***

China produces more tangerines than any other country, accounting for 36 percent of the world total in 1999-2001. The tangerine variety Ponkan is the most popular citrus consumed in China. Ponkan production has grown rapidly in China in recent years, increasing 71 percent over the 10-year period 1989-91 and 1999-2001. Production improvements and government policies, encouraging farmers to move away from grain production and produce higher-valued crops, have helped the expansion of China's tangerine industry.

Spain replaced Japan as the second largest tangerine producer in the late 1990s, accounting for 10 percent of world production. Spain mostly produces the clementine variety. Its production has expanded 26 percent over the 10-year period. Japan ranks third in world production, accounting for 7 percent of the total. Production in Japan fell 26 percent from 1989/91 to 1999/2001 as domestic demand has declined in favor of imported oranges and grapefruit.

Rounding out the list of top producers are Brazil, Iran, Thailand, the Republic of Korea, Italy, Turkey, and Egypt.

### ***U.S. Tangerine Production Concentrated in Florida and California***

The tangerine tree thrives in subtropical environments where cool night temperatures improve peel and flesh color and enhance flavor. As a result, production in the United States is centered in Florida and California, and to a lesser degree in Arizona. Small quantities also are grown for commercial production along the Gulf of Mexico in Louisiana, Alabama and Texas.

U.S. production has been growing at an average rate of 6 percent annually since the mid-1980s. Growth has been the fastest in Florida, where production has grown over an average of 10 percent annually, increasing from 222.3 million pounds in 1986/87 to 522.5 million pounds in 2002/03. As a result of its rapid growth, Florida's share of U.S. tangerine production has grown from 43 percent in 1986/87 to 70 percent in 2002/03.

The most common varieties grown in Florida are the Fallglo and Sunburst, which are early season tangerines, and the Honey (Murcott), which is the major late season tangerine. Plantings of previously popular varieties, the Dancy and Robinson, have declined in recent years. California tangerine varieties are mostly satsumas and clementines. Tangelo varieties, such as minneolas, also called honeybells and Orlandos, are grown in Florida and California, although Florida produces the greatest share of these fruit. Temples are in the tangor group and Florida dominates commercial production of this variety.

### ***Most Tangerines Are Sold in the Fresh Market***

An average of 70 percent of the tangerines produced in the United States are sold in the fresh market, with the remainder going to processing into juice, sections, or other uses. Tangerine juice is used by the Florida juice processing industry to blend with orange or grapefruit juice for coloring and sweetening.

There is a big grower price differential between the tangerines sold to the fresh and processing markets (fig.8). Unlike oranges, the processing market for tangerines is a residual market for the fruit that are damaged or too small to be sold in the fresh market.

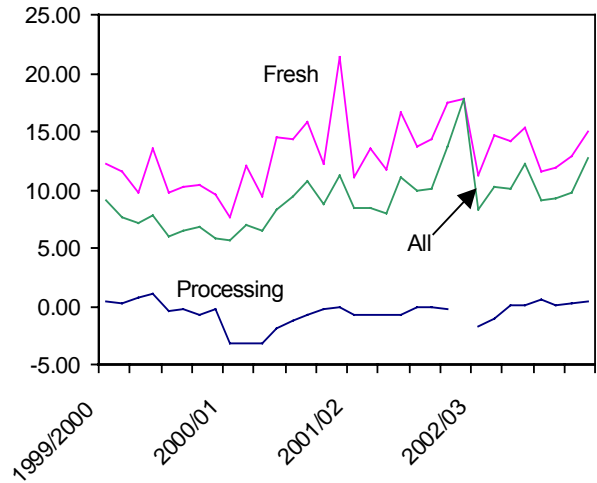
In the tangerine industry, the entire crop is utilized. Florida, the predominant producer, must market its fruit under standards set by a marketing order for grade, size, maturity, and quality. Similar standards are not in place for California and Arizona producers, although packinghouses set their own requirements for the fruit entering the fresh market. Any fruit that does not meet fresh-market requirements are sent for processing where appearance is not an issue. With much lower requirements and usually less demand than from the fresh market, growers are offered less per box for the fruit that is processed. In many cases, the price received by the growers does not cover all of their costs of production, which include the cost of hauling, picking, sorting, grading, packing, cooling, and marketing the fruit. As a result, the grower price for processed tangerines is represented as a negative value. By selling the already-picked fruit for processing, however, growers are able to recoup some of their costs for those tangerines that could not be sold fresh. Since most of the fruit, however, goes to fresh market, the price growers receive for all their tangerines more closely reflects fresh prices.

***Strong Demand Keeps Grower Revenues Stable***

The larger crops in recent years have kept growers' returns relatively stable, although Florida's grower prices have tended to trend downward (fig. 9). Tangerines fit modern consumers' preferences for convenient, easy-to-eat foods and have gained in popularity while other fresh citrus fruit have suffered. The demand for tangerines is so strong, that the surge in imported varieties in recent years has not produced a major impact on the utilization of the domestic crop. Returns continue to show a strong correlation with production, reflecting the cyclical nature of price, increasing with smaller crops, declining with larger crops.

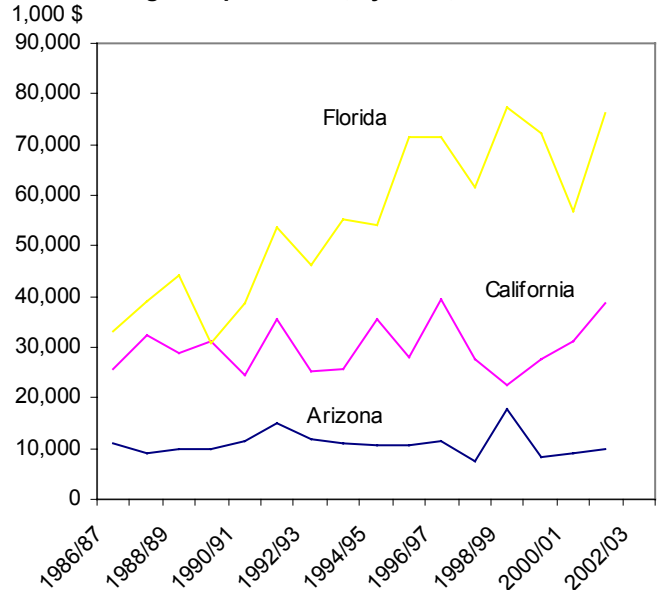
Another factor that drive tangerine prices, in addition to shifts in the production cycle, include substitution of tangerines for fresh oranges during seasons of poor crop performance for California oranges and the short season for each tangerine variety. Tangerines do not

Figure 8  
**Tangerine fresh and processing grower prices, 1999/2000 to 2002/03**  
\$/box



Source: National Agricultural Statistics Service, USDA.

Figure 9  
**Value of tangerine production, by State, 1986/87 to 2002/03**  
1,000 \$



Source: National Agricultural Statistics Service, USDA.

store well on the tree, like other citrus fruit, and must be marketed shortly after maturing. As a result, throughout the short tangerine season, from October through May, varieties in the fresh market continually change. Among the Florida crops, the season starts with the early varieties, Sunburst, Fallglo, and Robinson varieties and the season ends with the

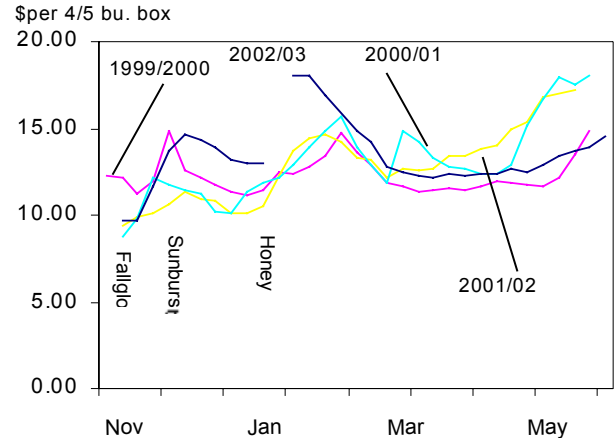
Honey tangerine. The tangelo season is very short, lasting only 2 to 3 months, mostly in November and December and have a separate pricing series. At the start of each variety's season, prices begin high, decline with the weeks in the market and then rise as supply dwindles and the next variety enters the market (fig. 10). The price spikes can be even stronger if a variety is late maturing, as happened in 2002/03 for the Honey tangerines. Because there was a month's lag between the availability of Honey and the end of the Sunburst tangerine supplies, prices rose sharply for the first 2 weeks of the Honey tangerine season before returning to more normal prices as supplies filled the markets.

### ***Imports Making a Big Impact on the U.S. Market***

The United States has always imported tangerines to supplement domestic production, much of which came from Mexico. Since the 1996/97 season, however, imports have been growing at a rate of 27 percent annually. While imports of Mexican tangerines have remained relatively stable over the 6 years, the imports of clementines, mostly from Spain has grown substantially, increasing from 33 million pounds in 1994/95 to 119 million pounds in 2000/03. Imports in 2002/03 would likely have been higher except the season began late due to a pest found in some clementine shipments the previous season. In 2001/02, Mediterranean fruit fly was discovered in a few clementines shipped to the United States. As a result, USDA's Animal and Plant Health Inspection Service banned imports for the remainder of the season and early in the new season. Once the two countries agreed upon a new inspection protocol, shipments began again. The Spanish were a little hesitant to resume the level of shipments of previous years, and total imports in 2002/03 were lower than the peak years 1999 through early 2001.

American consumers have shown a particular fondness for clementines because they are very easy to peel and they contain few to no seeds. Clementines are produced in the United States but at present, production is small. Domestic production is centered in California, where more tangerine acreage is planted to clementines than any other variety, except tangelos and satsumas. Recent planting of clementines exceeds that of any other variety. At present, the bulk of the production is marketed in the Pacific Northwest. California's clementines are

Figure 10  
**F.O.B. prices for Florida tangerines, 1999/2000-2002/03**



Source: Florida Citrus Administrative Committee

seedier than the imported ones. Seedless clementines are a result of the growing conditions under which the fruit is produced. The close proximity of California's clementine production with other citrus has resulted in cross-pollination of the flower that has caused its fruit to be seedy. The industry is working on ways to reduce the number of seeds produced and make their fruit more competitive with Spain's. Florida cannot produce clementines in any commercial capacity because clementines require a warm, arid environment and Florida's climate is too humid to produce a good-quality fruit.

### ***Tangerine Per Capita Consumption Continues To Grow***

Per capita consumption of tangerines has grown from an average of 2 pounds per person in the late 1990s to 2.6 pounds per person in the early 2000s (table 9). The combination of increased production and imports has provided a steadily growing supply to meet consumer demand. During the 1999/2000 season, when both domestic production and imports were at their height, fresh tangerine consumption rose to 2.8 pounds per person.

Despite the sharp growth in tangerine consumption in recent years, Americans still consume fewer tangerines than many other fresh fruit, including all other citrus except limes. There is much potential, however, for increasing per capita consumption to continue in the coming years as consumers continue to look for healthy and convenient foods, and the domestic industries strive to produce new varieties to meet consumers' expectations.

Table 9--Fresh tangerine supply and utilization, 1995/96 to present 1/

Year	Production	Imports	Total supply	Exports	Domestic consumption	Per capita consumption
	--Million Pounds--					Pounds
1995/96	645	43	688	49	640	2.4
1996/97	710	75	784	51	733	2.7
1997/98	619	90	709	55	654	2.4
1998/99	602	124	726	32	694	2.6
1999/2000	697	207	904	62	843	3.1
2000/01	618	206	823	33	791	3.0
2001/02	691	140	831	34	797	3.0
2002/03	646	170	816	37	779	2.9

1/ Includes tangelos and tangors.

Source: Economic Research Service, USDA.