



Commodity Profile: Citrus

*by Hayley Boriss, Junior Specialist
Agricultural Issues Center
University of California
agissues@ucdavis.edu*

Overview

Citrus originated in Southeast Asia and is characterized by fragrant flowers and edible juicy fruit. Today the most important commercial varieties, subsequently discussed in this commodity profile, include oranges, grapefruit, lemons, tangerines and to a lesser extent, tangelos, temples, and limes. As shown in Table 1, oranges account for the greatest value in terms of production, followed by grapefruit, lemons, and tangerines.

Table 1. U.S. Value of Citrus Production by Variety, 2005

	Citrus	Oranges	Grapefruit	Lemons	Tangerines
Value of Citrus Production	\$2,389 mill	\$1,498 mill	\$398 mill	\$351 mill	\$130 mill

Source: USDA National Agricultural Statistics Service

The major citrus producing states in the United States include Florida, California, Arizona, and Texas. Table 2 provides an overview of the share of U.S. production by state and commodity.

Table 2. Quantity Share of U.S. Citrus Production by State and Variety

	Citrus	Oranges	Grapefruit	Lemons	Tangerines
	<i>Share of U.S. production quantity</i>				
Florida	67 %	74 %	54 %	-	58 %
California	29 %	25 %	19 %	89 %	37 %
Arizona	1 %	0.18 %	26 %	11 %	5 %
Texas	3 %	0.82 %	<1 %	-	-

Source: USDA National Agricultural Statistics Service

Tangerine production also occurs in the Gulf region of Louisiana, Alabama, and Texas, while tangelos and Temples are produced in much smaller amounts and almost entirely in Florida. Historically, production of limes has also occurred entirely in Florida,

as lime production is best suited for tropical climates. However, the United States no longer has a commercial lime industry, due to citrus canker in combination with hurricanes.

The marketing season for most citrus fruits begins in late fall—beginning as early as August for lemons—and lasts through spring—until as late as July for Texas and Arizona grapefruits and California lemons. Arizona and California have year-round production through the use of multiple varieties including Navel and Valencia oranges. (NASS).

Demand

In the United States, per capita consumption of oranges is higher than that of any other fruit. Much of the per capita consumption of oranges is attributable to orange juice, which has gained in popularity from its high consumer convenience factor. Behind orange consumption, grapefruits are the second leading citrus fruit consumed per capita, followed by lemons, tangerines, and limes (Figure 1).

While per capita consumption of most citrus products has remained strong or increased in recent years, per capita consumption of grapefruit has weakened. In 1970, per capita consumption of grapefruit was about 21 pounds per person, peaking at nearly 24 pounds in 1976 and 1977. By 2003, consumption had decreased to 12 pounds per capita. Part of the decline in grapefruit consumption is attributable to decade-old studies finding that grapefruit consumption intensified the effects of certain medication. Because a large percentage of grapefruit consumers are older and more prone to taking medication, it is thought that this has affected overall consumption (ERS 2005).

Per capita consumption of lemons has varied mostly between 4 and 8.5 pounds since 1970. In 2003 however, per capita consumption reached a high of 8.6 pounds. Most lemons are consumed as either a cooking ingredient, a garnish, or as juice in lemonade or other carbonated beverages or drinks (ERS 2004). Demand for lemons is highest in the summer, and although California producers are able to store lemons to provide a year-round supply, U.S. imports of lemons peak in the summer months.

Per capita consumption of tangerines has experienced periods of highs and lows over the last few decades. Consumption peaked in 1979 at 4.9 pounds and reached a low of 2.3 pounds in 1990. However, since 1990 consumption has increased, reaching 3.6 pounds in 2003. The easy to peel skin of the tangerine and easy to separate sections have helped to increase the popularity of this citrus fruit.

Per capita consumption of limes increased over the last decade and a half, from nearly 1 pound per capita in 1989 to 2.4 pounds in 2003. Because the Florida-based U.S. lime industry no longer exists, imports account for 100 percent of lime consumption.

Marketing

Most citrus products have been marketed as a good source of vitamin C. Some citrus industry promotions and marketing programs are supported under the federal Market

Access Program, helping U.S. exporters to expand global markets for U.S. citrus in other countries including Canada, France, the United Kingdom, and Asia (FAS 2005).

In Florida, 95 percent of commercial orange production is destined for processing, mainly as orange juice. Over 20 processors of orange juice operated in 2001. Conversely, in California, oranges are mainly produced for fresh consumption with only 21 percent of production is intended for processing. In Arizona and Texas, the share of production processed is slightly higher at 23 and 30 percent, respectively. This distinction is largely due to the influence of weather, which makes western orange production less juicy but thicker skinned for easier transport, while the moist, warm climate of Florida promotes juicy oranges with thin skins that bruise easily and are less ideal for shipping and marketing as fresh fruit. As a result, Navel oranges account for the majority of Western acreage because of their suitability for the fresh market, while Florida varieties are comprised of Ambersweet, Hamlin, Pineapple, and Temple which are used mostly for processing. However, the Valencia variety is a viable alternative in both regions for late season production (ERS 2002).

In contrast to the orange market, 61 percent of U.S. grapefruit production went to fresh market uses, along with 69 percent of lemon production and 78 percent of tangerine production (ERS 2006). The juice market for tangerines is solely used as a residual market for inferior fresh-market fruit. Tangerines that are processed for juice are often used to blend with orange juice or grapefruit juice to enhance both color and flavor (ERS 2003).

While aggregated national statistics suggest that most oranges are processed and most grapefruits, lemons and tangerines are sold fresh, the share varies by state. With regard to grapefruit, in 2004, 40 percent of Florida production was used for processing and 53 percent in Texas. In contrast, in California 10 percent of grapefruit production went to processing and all of Arizona production was utilized in the fresh market (ERS 2006). Texas producers have made attempts to differentiate their grapefruit production from Florida's with patented alternative varieties including Ruby-Sweet and Red Star. Recently, Florida growers have attempted to regulate the early season marketing of grapefruit to prevent immature fruit that creates a poor eating experience from entering the market too soon, and to increase prices (ERS 2005).

Supply

The world's largest citrus producer in 2004 was Brazil, followed by China who overtook the United States in terms of quantity of production for the first time in 2004. The United States was ranked third, followed by Mexico and Spain (FAS 2005). However, the United States has been and remains the world's largest grapefruit producer, accounting for roughly 40 percent of world production (ERS 2005). In China, 93 percent of total citrus produced is consumed fresh, with only 4 percent processed for juice or canning, and China's tariff rates for fresh and processed imports remain high (FAS 2005).

World citrus production can fluctuate as a result of severe weather conditions. Hurricanes ravaging Florida can decimate Florida citrus production and in some years

freezing weather has damaged California and Arizona crop, as have freezes in Spain (FAS 2005).

Total U.S. bearing acreage has decreased for almost all citrus fruits in recent years, but with varying degree (Figure 2). Acreage has decreased most significantly for grapefruit, falling by 37 percent between 1997 and 2004. Part of this decline is due to decreasing demand for grapefruits, which has caused producers to diversify into other crops or sell their land (ERS 2005). Acreage of oranges, grapefruit, and tangerines decreased in the latter half of the 1980s, increased again in the early 90s, and has since decreased in the first half of the new millennium. Lemon acreage has decreased since its high of 77,000 acres in 1981 but remained at roughly 62,000 for over a decade before increasing to 65,000 in 2002 and decreasing to 60,000 in 2004. Lime acreage fell as many trees were ripped from production because of citrus canker and eventually, following low prices in the early 2000, the commercial industry was lost.

The total value of U.S. citrus production is large in comparison to other U.S. fruits produced. In 2004 oranges were the fourth highest valued fruit and nut crop behind grapes, almonds and apples (NASS). The value of citrus production, including oranges, has increased from a low of \$1.6 billion since 1982 to \$2.5 billion in 2004, although the total value has fluctuated around \$2.5 billion for several years (Figure 3).

Prices

Grower prices for most citrus products have been variable over the last decade and a half. Lemons typically receive the highest price per pound and grapefruit the lowest, but not always. The price of fresh oranges has shown strong variation between years (Figure 4). Prices for processed citrus are generally much lower than those of fresh citrus.

Imports

Imports of citrus have increased over the last decade, reaching \$506.5 million in 2004, although well short of the record high of \$706.4 million in 1990. In 1990, over 90 percent of total citrus import value was attributable to orange juice, including concentrate. By 2004, although orange juice remained the leading imported citrus product, it accounted for just 32 percent of citrus imports. Lemons and limes were the second most important citrus import in 2004 accounting for 29 percent of the total citrus import value, followed by mandarins with 19 percent and fresh oranges with 12 percent (Figure 5).

The largest citrus exporters to the United States in 2004 were Mexico, exporting mainly lemons and limes, Brazil, exporting mainly orange juice, and Spain, exporting mainly mandarins. In 2004, Mexico was responsible for \$170.2 million in U.S. citrus imports, or roughly one-third of all U.S. citrus imports (Figure 6). About 88 percent of all lemon and lime imports came from Mexico, and these imports accounted for 52 percent of the value of all Mexican citrus imports. In 2004 Spain exported \$78.2 million in citrus products to the United States, accounting for 15 percent of total citrus imports and 76 percent of all mandarin imports. Roughly 96 percent of citrus imports from Spain were mandarins. Orange juice imports from Brazil have decreased substantially since the

early 1990s. Imports from Brazil (which historically have been nearly all orange juice) accounted for 75 percent of total citrus imports in 1990. By 2004, the share of U.S. citrus imports from Brazil fell to second place with 20 percent. South Africa and Australia rounded out the top five exporters in 2004 with just over 10 percent each.

Exports

In 2004, total U.S. citrus exports were valued at \$985.5 million, making the United States a net exporter of citrus by nearly \$480 million. The value of citrus exports peaked in 1997 at \$1.09 billion before decreasing to the present value of \$985.5 million. Fresh oranges and orange juice are the major U.S. citrus export items in terms of value followed by fresh grapefruit, lemons and limes, and grapefruit juice (Figure 7). Exports of fresh oranges were valued at \$363.0 million while orange juice was valued at \$243.9 million. Combined, oranges and orange juice accounted for just over 60 percent of U.S. citrus exports in 2004. Exports of oranges decreased sharply in 1999 as the result of adverse weather conditions in California. Fresh grapefruit exports were valued at \$216.8 million in 2004 and grapefruit juice exports were valued at \$65.0 million. Total grapefruit exports accounted for 29 percent of total U.S. citrus exports. Lemon and lime exports were valued at \$69.1 million.

The largest markets for U.S. exports in 2004 were Canada, Japan, and Korea, with Canada receiving 34.2 percent of total exports, Japan 24.9 percent, and Korea 11.0 percent (Figure 8). Canada is the leading market for U.S. orange juice and oranges, while Japan is the leading market for U.S. grapefruit and U.S. lemons. Korea is the second largest market for oranges, behind Canada. The Netherlands was also a major market for U.S. orange juice and grapefruit juice exports and the leading market for the more narrowly defined category of frozen orange juice exports.

Current Issues

Citrus canker is a major problem for commercial and residential citrus trees in Florida and poses a threat to all U.S. citrus growers. A devastating bacterial disease dispersed by wind, rain or contaminated equipment, citrus canker results in premature leaf and fruit drop and a decline in citrus tree health and production of fruit. In addition, lesions on the fruit make it unattractive. Although federal foreign quarantines are in place to protect against entrance of citrus canker at borders, hurricane winds introduced it to Florida in 1986, 1995 and 1997. In January 2006 USDA announced it would no longer fund the citrus tree removal program in Florida as it no longer considers it possible to eradicate citrus canker in Florida by removal of trees. For more information on citrus canker see Jetter et al. and the Florida Department of Agriculture and Consumer Services website.

A U.S. anti-dumping order against imports of frozen concentrated orange juice from Brazil was enacted in 1987 determining that Brazilian exporters sold orange juice in the U.S. market at less than fair value. Subsequent reviews enabled the order to stand until it was revoked in April 2005. However, a second petition filed in December of 2004, before the 1987 order was revoked, was aimed at addressing both frozen concentrated orange juice and not-from-concentrate orange juice from Brazil. In 2006, the Department of Commerce and the USITC both found in favor of the order. For more on this issue see

the Department of Commerce website at: <http://usinfo.state.gov/wh/Archive/2006/Jan/12-152778.html> or the search the USITC website at or www.usitc.gov/.

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FIGURES

Figure 1a. U.S. per Capita Citrus Consumption, 1970-2003

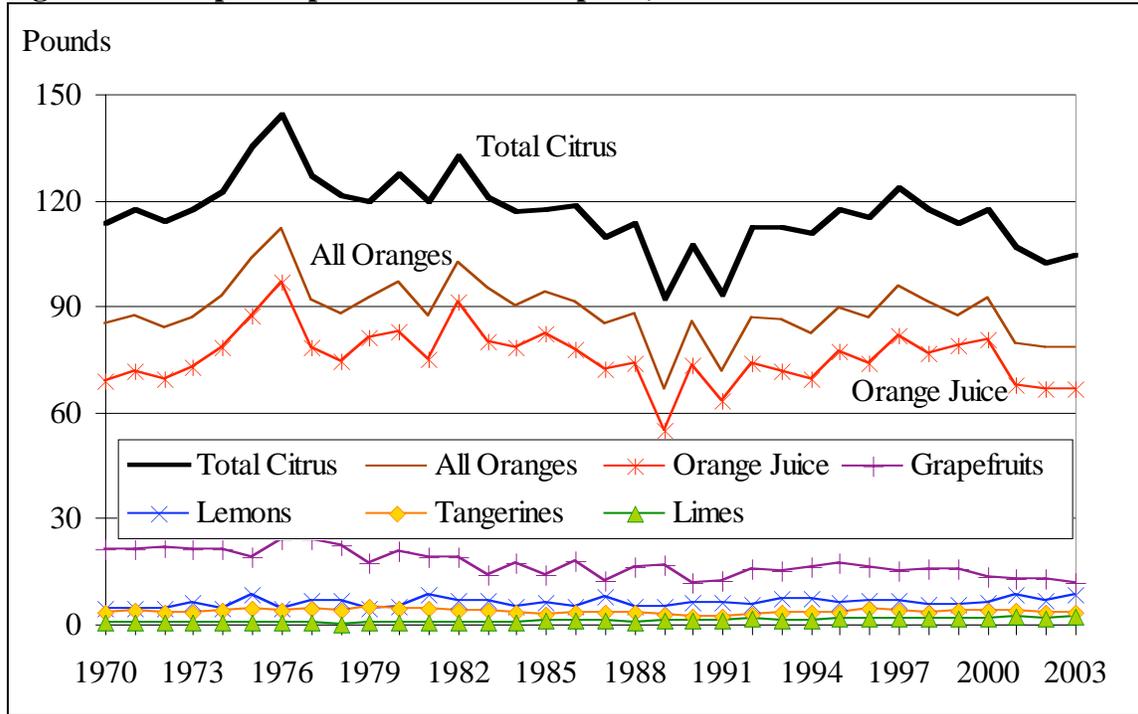
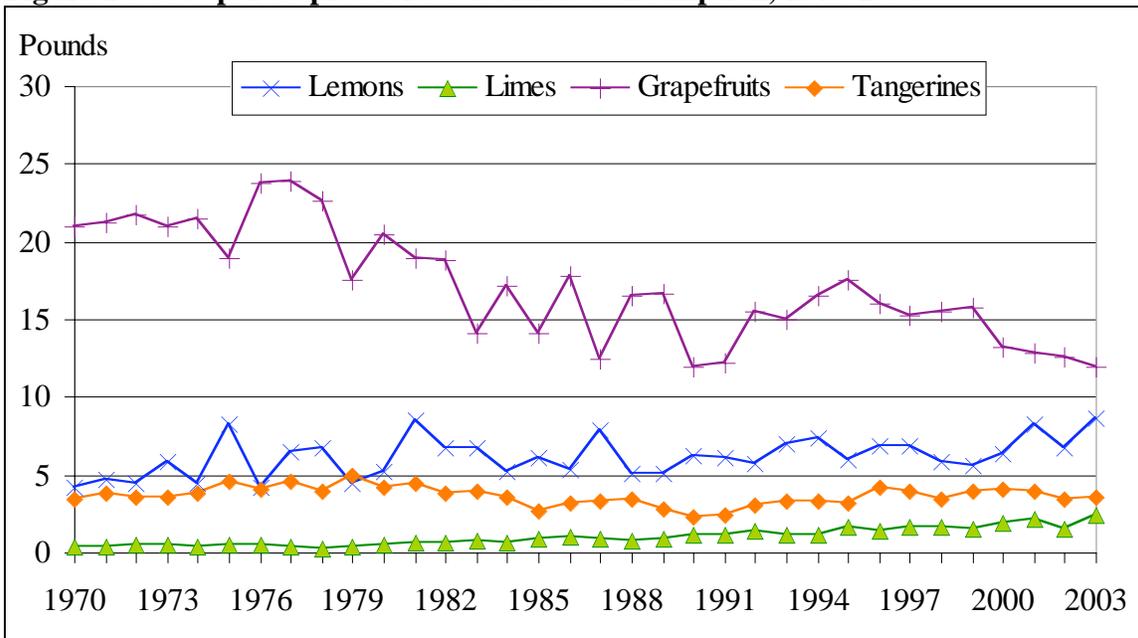


Figure 1b. U.S. per Capita Selected Citrus Consumption, 1970-2003



Note: "Total Oranges" includes temples and "Tangerines" includes tangelos and mandarins.

Source: USDA Economic Research Service, Per Capita Data System

Figure 2a. U.S. Bearing Acreage of Citrus, 1980-2004

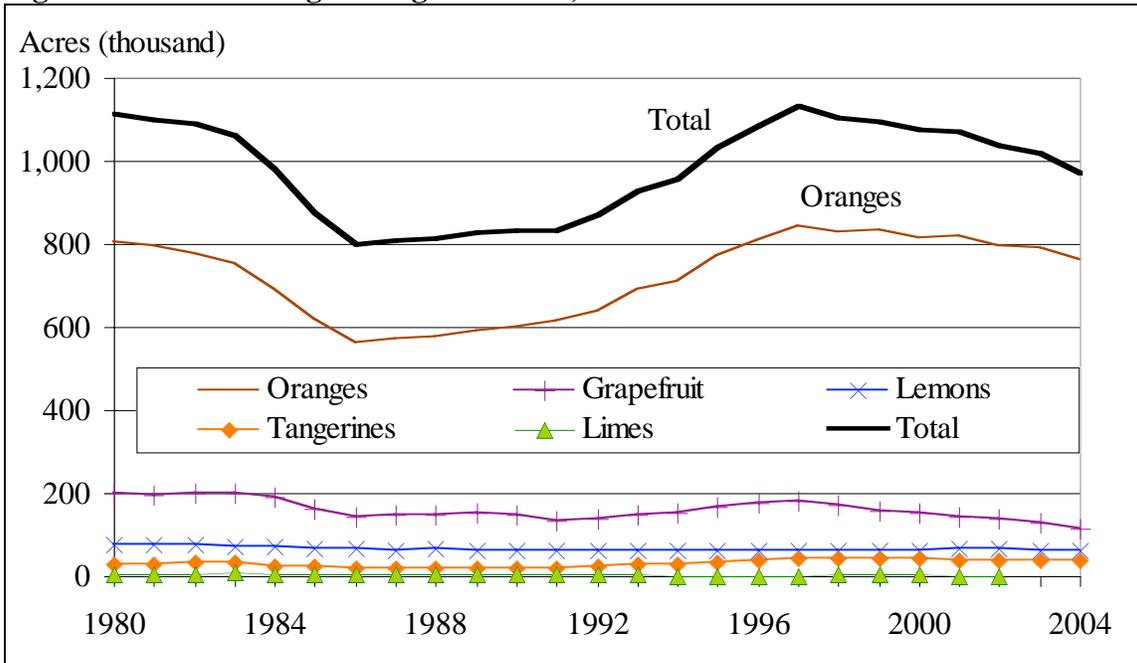
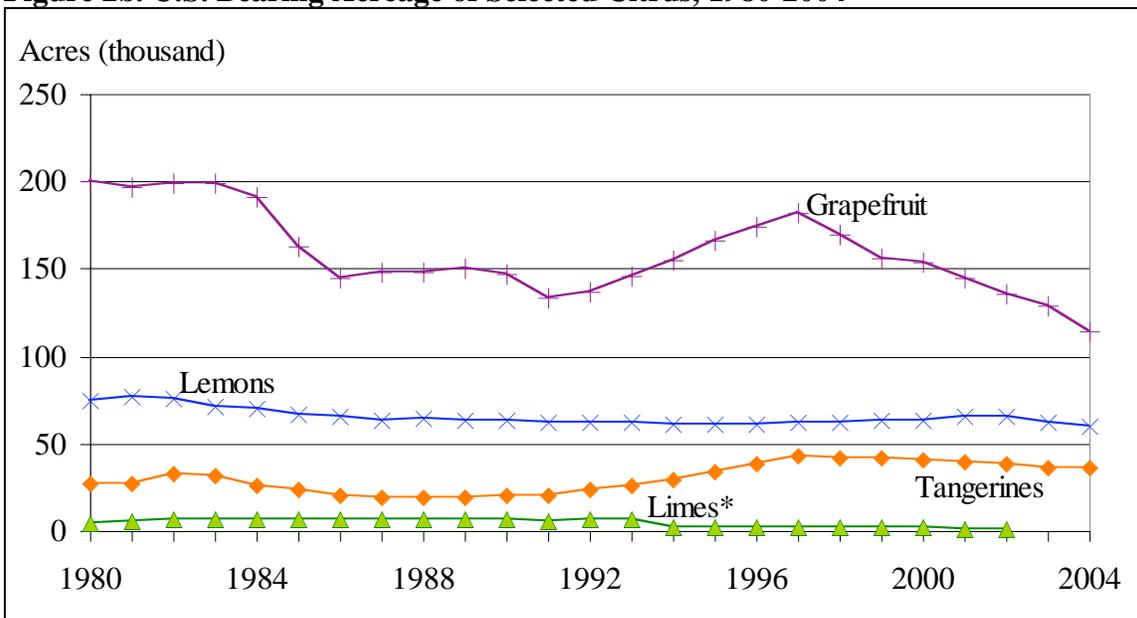


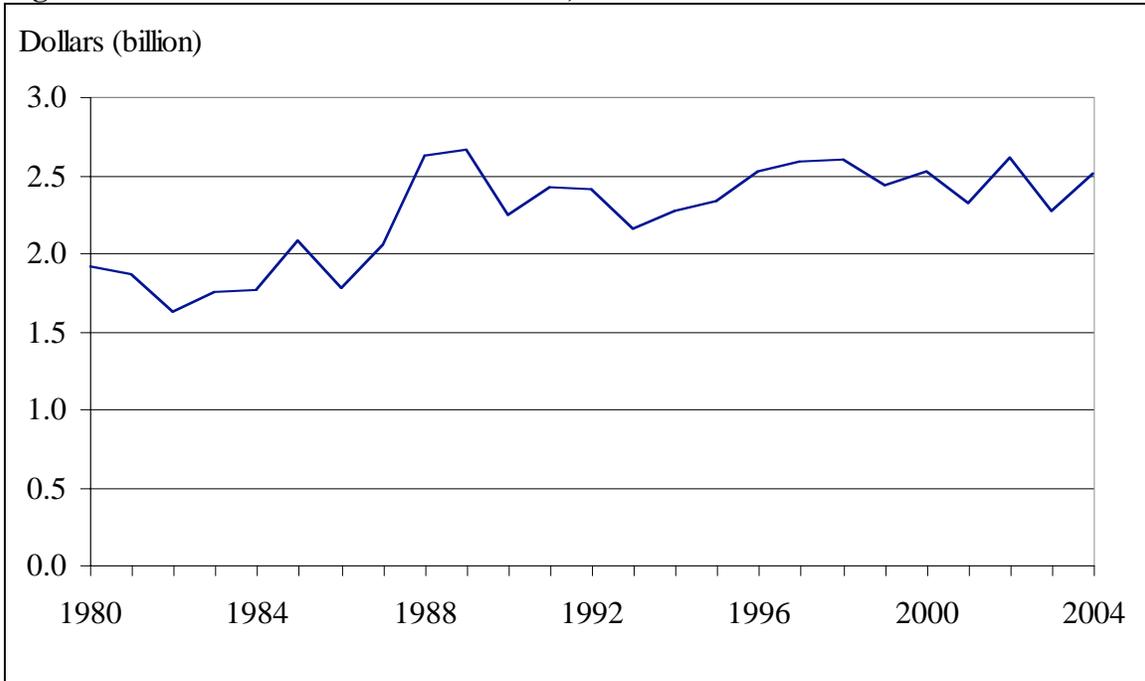
Figure 2b. U.S. Bearing Acreage of Selected Citrus, 1980-2004



*Data source discontinued after 2002

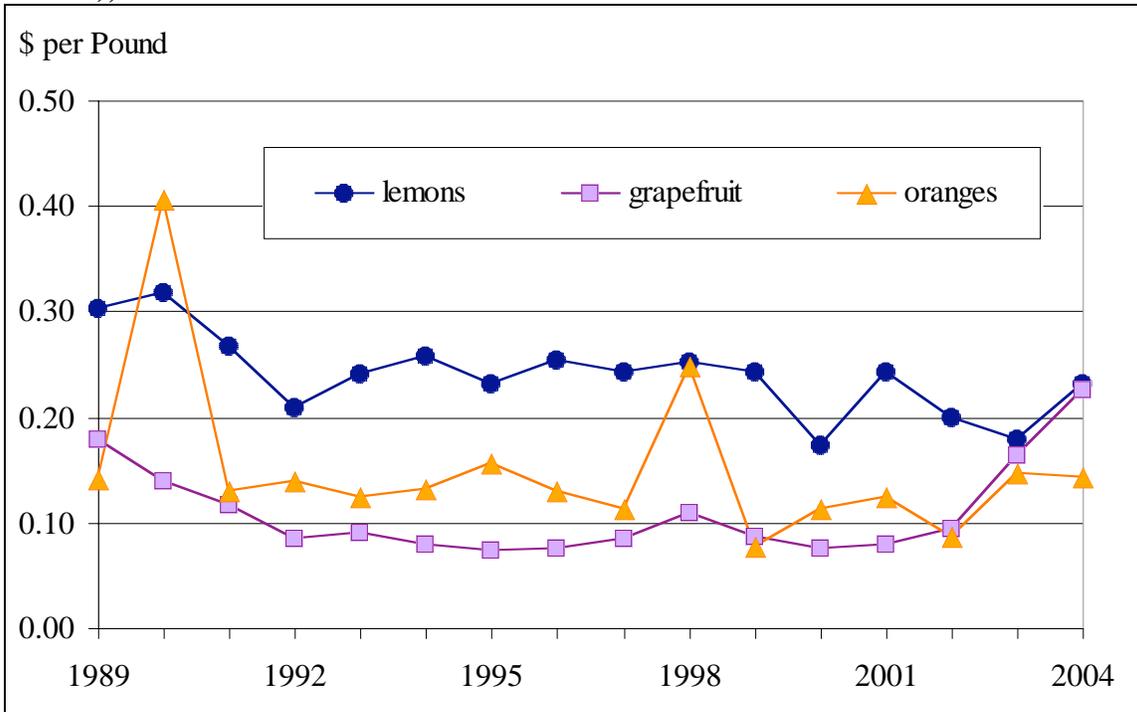
Source: USDA Economic Research Service, Fruit and Tree Nuts Yearbook

Figure 3. U.S. Value of Citrus Production, 1980-2004



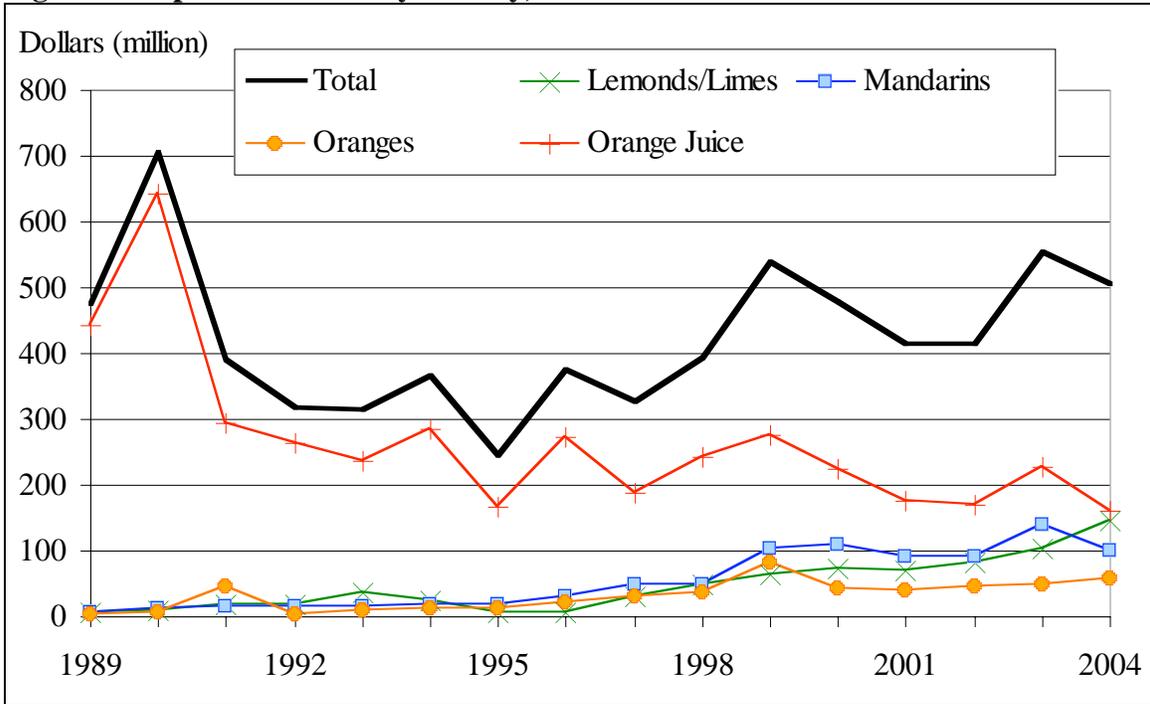
Source: USDA Economic Research Service, Fruit and Tree Nuts Yearbook

Figure 4. U.S. Grower Price for Fresh Citrus (in year-2000 inflation-adjusted dollars), 1985-2004



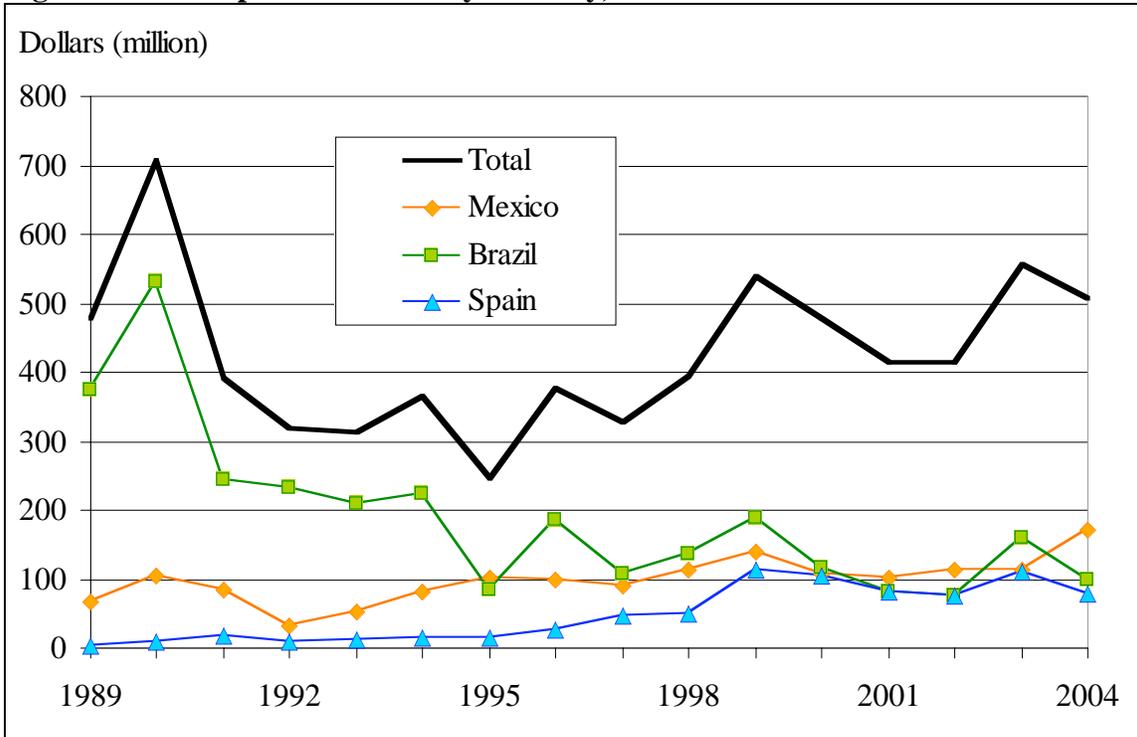
Source: USDA Economic Research Service, Fruit and Tree Nuts Yearbook

Figure 5. Imports of Citrus by Variety, 1990-2004



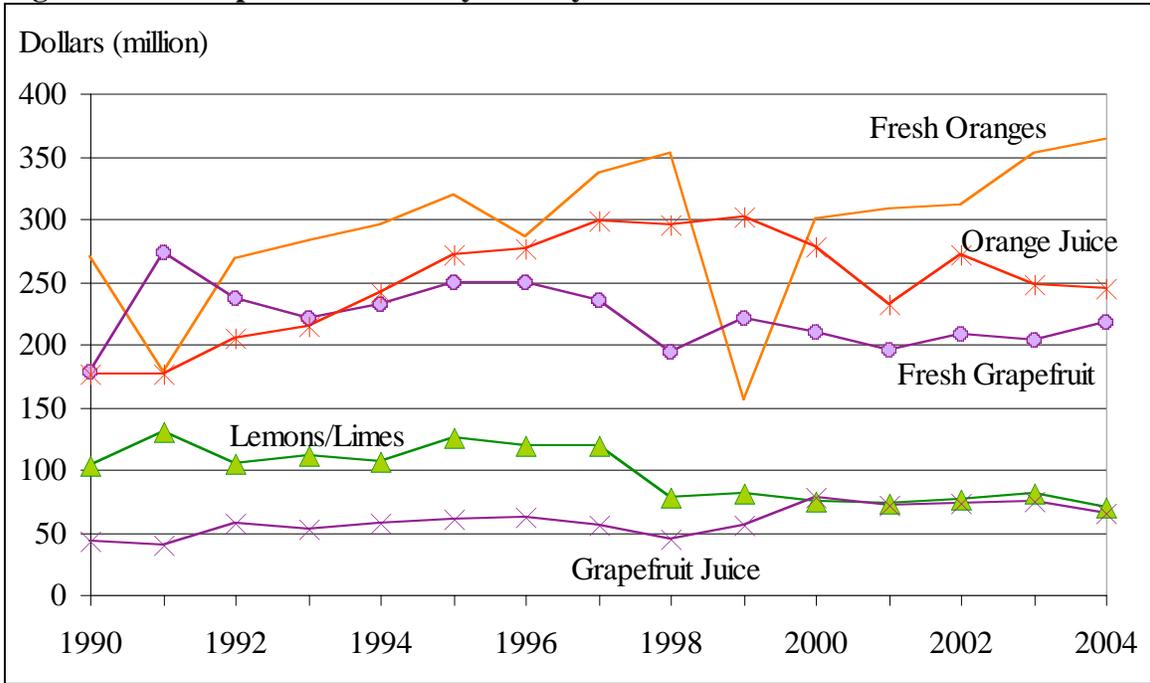
Source: USDA Foreign Agricultural Service

Figure 6. U.S. Imports of Citrus by Country, 1990-2004



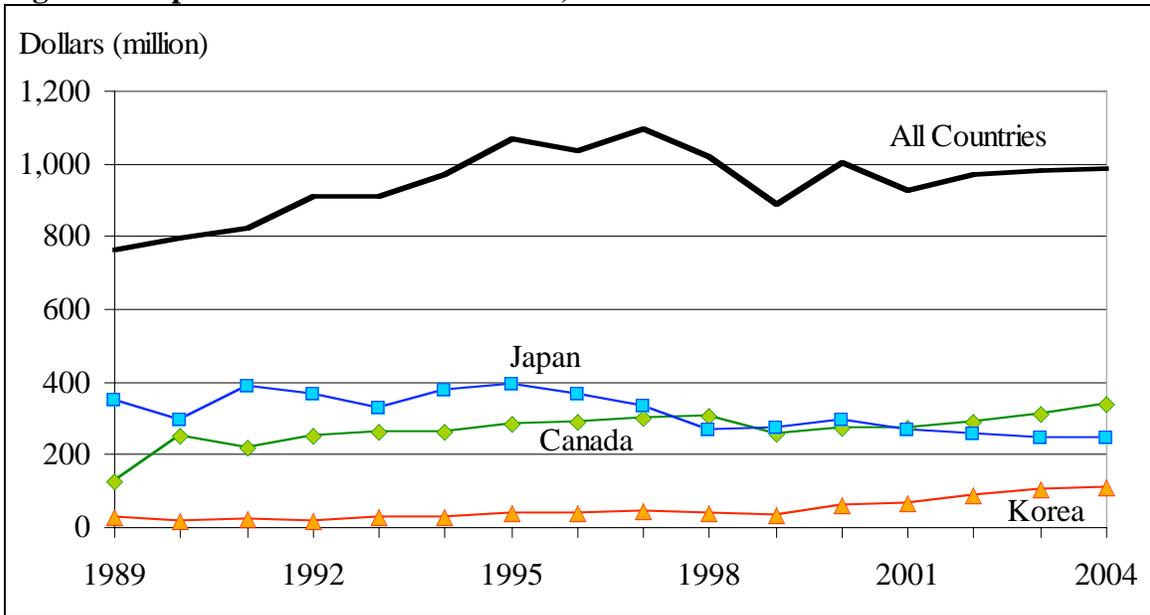
Source: USDA Foreign Agricultural Service

Figure 7. U.S. Exports of Citrus by Variety



Source: USDA Foreign Agricultural Service

Figure 8. Export Markets for U.S. Citrus, 1990-2004



Source: USDA Foreign Agricultural Service