

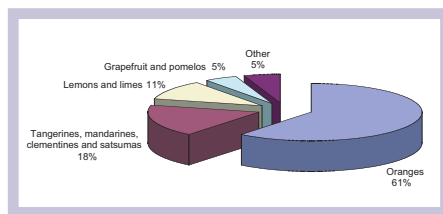
Production, consumption and trade of citrus fruits.

The citrus fruit group includes oranges, tangerines (clementines and mandarins), satsumas, grapefruits, lemons and limes. Oranges are the most widely produced, accounting for two thirds of world production of citrus fruits. In 2001, citrus fruits were produced in 137 countries, but the main producers – Mediterranean countries, Brazil, the United States and China – together accounted for more than two thirds of production. As the table shows, some countries specialize in production of specific citrus fruits.

### Consumption trends

While consumption of fresh fruits has increased in developing countries, in developed countries it has decreased as people instead consume an ever-growing quantity of juices. The most processed citrus fruit product is orange juice, which is available in two forms: freshly squeezed orange juice and frozen concentrated orange juice (FCOJ). Freshly squeezed juice may be pasteurized or unpasteurized, and most of it is consumed in markets close to the production site. The major advantage of FCOJ is its volume, which is six times less than that of freshly squeezed juice. The resulting reduced transport costs give FCOJ the largest share of international trade in orange juice. Not-from-concentrate orange juice tends to be consumed in greater quantities by North American and European markets. The US state of Florida and the Brazilian state of São Paulo account for 85% of world orange juice production. Nine tenths of Florida's juice is consumed in the United States, while 99% of Brazil's juice is exported to the European Union, North America and Asia.

### Share of various fruits in total world citrus fruit production (average 2001–2003)



Source: Data from FAO.

### Main citrus fruit producing countries, 2001

Oranges	Brazil, United States, Mexico, China, India, Spain, Italy, Iran, Egypt, Pakistan
Small citrus fruits	China, Spain, Japan, Brazil, Iran, Thailand, United States, Italy, Turkey
Lemons and limes	Mexico, India, Argentina, Iran, Spain, United States, Italy
Grapefruits	United States, China, Israel, Cuba, Mexico, South Africa



Grapefruits, oranges and limes.

### Citrus fruits in cosmetics and industry

Citrus fruit by-products are extracted from the peel. Essential oils come from the peel and are used to perfume cosmetics, fragrances, foods and home cleaning products. Citrus pulp pellets from the extraction of orange juice are used for animal feed. D-limonene is extracted from lemon and orange rinds or solids and is the purest source of monocyclic terpene, which is used mainly in industrial solvents.

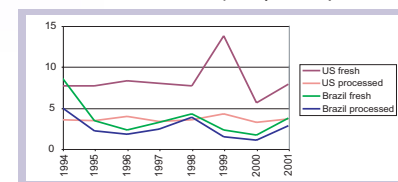


Women cultivating young orange trees in Panama. Citrus trees require rich and well-drained soil as well as periodic fertilization, irrigation and pruning.

### Brazilian citrus fruits and the FTAA

The Free Trade Agreement of the Americas (FTAA), which is expected to enter into force by 2005, will mean that orange juice from Brazil can be imported duty-free into the United States. The Florida orange industry fears that US markets will be flooded by Brazilian juice with its lower production costs. Negotiations are currently underway between Brazil and the United States over the duty-free entry of citrus fruits into the United States. Concerned that the United States may decide to maintain a duty for its imports, Brazilian citrus industries have already entered the US market by investing in Florida's processing plants.

### Grower orange prices in Brazil and the United States (US\$ per box)



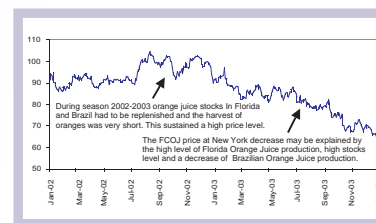
Source: Data from FAO.

### Brazil protests excise tax by Florida

To promote marketing and exports of Florida citrus juices, the state's producers and processors of citrus fruits pay a self-imposed tax to the Florida Department of Citrus Fruits. This tax is also applied to imports from foreign countries and from other states of the United States. Brazil considers this tax incompatible with the WTO rules on international trade and has requested the establishment of a WTO panel to settle this dispute with the United States.

### FCOJ futures prices at the New York Commodity Exchange

(nearest contract in US cents per pound solid)



Source: Data from NYCE.

(Hedging fresh fruit price risks with a specific fresh citrus futures contract is no longer possible, as the Mercado de Futuros sobre Citricos y Mercaderías in Valencia, Spain, which sold the only fresh citrus futures contract, recently closed.)

### Price instability

Citrus fruit prices depend on demand and supply. The supply is largely determined by climatic conditions, pest diseases, yields and the age of trees. It is not greatly influenced by price evolution in the short term, since there is a latency period of three to five years before trees produce fruit. This contributes to the high investment necessary for production and thus discourages producers from moving out of citrus production. Even if producer response to price incentives is low, price instability is relatively high, mainly because of climatic risks such as frost. Price risks can be hedged through orange juice futures at the New York Board of Trade.