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## Global Trade in Fruits and Vegetables Brings Variety to the Nation's Grocery Stores

Ken Hammond, USDA

Twenty years ago, shoppers at U.S. grocery stores contented themselves with apples, pears, oranges, and bananas. More exotic fruit was sampled mainly on cruises and as garnishes to tropical drinks. Now mangoes, papayas, avocados, kiwi fruit, and more are available on produce shelves year round. This phenomenon is due to rapid growth in world fruit and vegetable trade. Many factors lie behind this growth, especially rapid advances in fruit handling and transport technology. Regional trade agreements and changing consumer preferences have also played a strong role. A trend toward trade liberalization and an extension of trading blocs facilitated trade, while rising

incomes have created a middle class that demands quality produce in all seasons and is willing to pay the price.

Improvements in transportation technology have reduced delivery time and shipping costs, so that perishable products can travel thousands of miles with no substantial loss in freshness and quality. The marketing reach of perishable products has been further extended by packaging innovations, new advances in refrigeration and atmosphere control, fruit and vegetable coatings, and other techniques that slow deterioration of food products. Satellite technologies, particularly global positioning systems, are becoming increasingly available

and less expensive. These and other electronic technologies enable shippers to track their cargo around the world, monitor quality, reduce the risk (and costs) of liability claims, and shorten cargo delivery time.

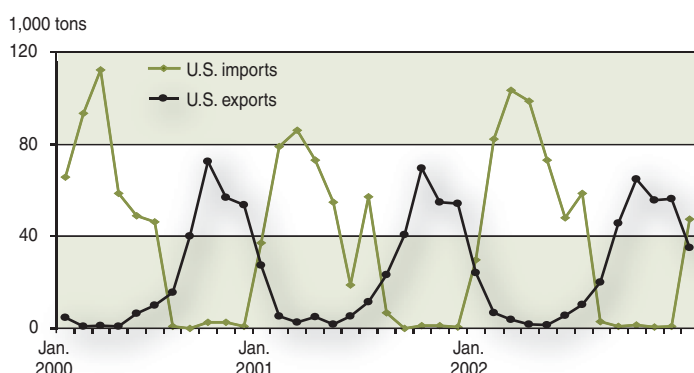
Globalization of trade in fruits and vegetables has provided consumers with more fruit and vegetable varieties year-round, overcoming seasonality and smoothing price fluctuations. Fresh grapes, for example, are now available year round, as California supplies of summer and fall grapes give way to grapes from Chile, Mexico, and elsewhere during the winter and spring. Partly as a result of this trade, U.S. per capita consumption of fresh grapes increased from less than 3 pounds in the early 1970s to more than 7 pounds over the last several years. Meanwhile, the United States ships most of its grape exports—mainly to its NAFTA neighbors (Canada and Mexico) and East Asian countries—from August to November. **W**

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This finding is drawn from . . .

*Global Patterns of Trade in Fruits and Vegetables*, by Sophia Wu Huang and David R. Kelch, WRS-04-06, USDA/ERS, May 2004, available at: [www.ers.usda.gov/publications/WRS0406/](http://www.ers.usda.gov/publications/WRS0406/)

Consumers and producers of grapes both benefit from global trade



## Untapped Potential of Cuba's Citrus and Tropical Fruit Industry



Thomas J. Manning

Cuba dominates the Caribbean in terms of land area, population, and agricultural production. The ongoing U.S. embargo now prevents Cuba from having much impact on intra-American trade. If the embargo were lifted, however, U.S. exports to Cuba could rival or exceed those to the rest of the Caribbean. Cuban exports to the United States could compete with U.S. producers, particularly in Florida, for some fruit and

vegetable products. Reopening of U.S.-Cuban trade could provide markets and foreign exchange to spur Cuban economic growth to significantly higher levels.

Cuba began to restructure its economy in the early 1990s in response to the economic crisis that followed the elimination of subsidies from the former Soviet Union. The crisis forced Cuba to move toward a more open economy and more market-oriented trade. The Government broke up many large state farms, provided farmer incentives to increase production, and allowed farmers markets where after-quota production can be sold at free-market prices. If its economy continues to restructure, Cuba could become an increasingly important agricultural importer and exporter.

Cuba has an ideal climate and land resources for citrus and tropical fruit production. Fruit production has been growing since the 1950s,

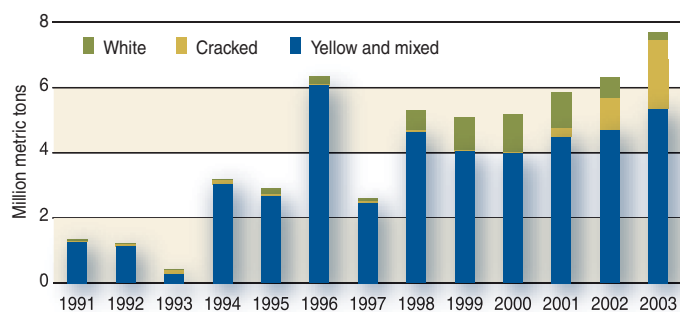
## Mexico's Corn Industries and U.S.-Mexico Corn Trade

U.S. corn exports to Mexico have increased dramatically since the implementation of the North American Free Trade Agreement (NAFTA) in January 1994. Most of the increased trade has been in yellow corn, used primarily to feed livestock. But over the past 3 years, about 10 percent of this trade has consisted of white corn, which is used to produce tortillas and other traditional Mexican foods.

There are two fairly distinct markets for corn in Mexico: yellow corn for livestock feed and other industrial uses, such as the production of starch and high-fructose corn syrup, and white corn for direct human consumption. Over the next decade, the growth of yellow corn exports is largely assured by the anticipated expansion of Mexican livestock production. Prospects for white corn exports are more difficult to predict, given the changing structure of Mexico's corn, milling, and tortilla industries.

The Mexican corn sector is mostly devoted to the production of white corn. It continues to feature a large number of very small production units, typically about 10 hectares (25 acres), marked by low mechanization and low yields. Corn production has remained fairly stable during the NAFTA period, in part due to Mexican agricultural supports.

U.S. corn exports to Mexico still consist primarily of yellow corn



Yellow and mixed corn exports are calculated by subtracting white corn exports from total corn exports. Cracked corn (broken or ground kernels) is defined as a distinct commodity from corn. Like yellow corn, it is primarily used as animal feed.

Sources: USDA, Foreign Agricultural Trade of the United States database (total corn and cracked corn exports) and USDA, Agricultural Marketing Service, *Grain and Feed Weekly Summary Statistics*, various issues (white corn exports)

Roughly 45,000 tortilla producers and 10,000 corn millers operate throughout Mexico. But 90 percent of corn flour production is concentrated in two of Mexico's largest food

companies, Gruma and Grupo Minsa. Gruma also produces tortillas and tortilla-manufacturing equipment and has subsidiaries in Central America, Europe, the United States, and Venezuela. Gruma's U.S. operations accounted for 47 percent of corporate sales in 2002.

Pressures for change come from both the supply and demand sides. Increased concentration of Mexico's corn milling and tortilla industries is likely to narrow the opportunities for small-scale producers to market their output. At the same time, a shift in Mexican diets toward greater meat consumption and away from traditional foods is likely to limit the growth of white corn demand.

Income growth will not only drive changes in food demand, but it will also leverage structural change in Mexican agriculture. Improved nonagricultural job opportunities will draw some producers out of farming while supplementing the incomes of other farm households. The extent to which economic growth boosts tax revenues also may influence the degree to which the Mexican Government supports its agricultural producers. For U.S. exporters, these factors will likely assure Mexico's position as an important and growing market for yellow corn, while export possibilities for additional white corn sales are more difficult to project. **W**

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**This finding is drawn from . . .**

*U.S.-Mexico Corn Trade During the NAFTA Era: New Twists to an Old Story*, by Steven Zahniser and William Coyle, FDS-04D-02, USDA/ERS, May 2004, available at: [www.ers.usda.gov/publications/fds/may04/fds04d02/](http://www.ers.usda.gov/publications/fds/may04/fds04d02/)



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spurred by demand from a rapidly growing population. Growth accelerated in the mid-1990s with new incentives arising from government-sponsored garden programs, the establishment of private, price-oriented agricultural markets, and the restructuring of state farms. According to the Food and Agriculture Organization of the United Nations, tropical fruit production expanded to 517,000 metric tons in 2002, more than double its level in 1990.

Urban gardens and larger more intensive gardens on the edges of cities and towns grow much of Cuba's tropical fruit. These gardens use little in the way of purchased chemicals, fertilizers, and other inputs and depend heavily on labor. Intensive intercropping with tropical fruit trees provides vegetables critical shade from the hot tropical sun.

Cuba's export prospects will likely hinge on access to nearby, high-income markets like Canada and the United States. If the U.S. embargo were lifted, Cuba's citrus industry would likely look for markets in the United States for fresh citrus, processed citrus products, and citrus

byproducts. In turn, Cuba's citrus industry could become a market for U.S. exports of technology, citrus rootstock and other inputs, and capital. U.S.-Cuban partnerships might develop to partially integrate citrus production, processing, and marketing for U.S. markets. Initially, Cuba might even look to U.S. sources for high-quality tropical fruits for Cuba's growing tourist market. Eventually, as Cuba's economy and tropical fruit sector recover, U.S. consumers could provide opportunities for an increasingly competitive Cuban tropical fruit sector. **W**

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**This finding is drawn from . . .**

*Cuba's Citrus Industry: Growth and Change*, by William E. Kost, available at: [www.ers.usda.gov/publications/fts/APR04/fts30901/](http://www.ers.usda.gov/publications/fts/APR04/fts30901/)

*Cuba's Tropical Fruit Industry*, by William E. Kost, available at: [www.ers.usda.gov/publications/fts/APR04/fts30902/](http://www.ers.usda.gov/publications/fts/APR04/fts30902/)