



Agricultural Issues Center
University of California

Created October 2005

Commodity Profile: Tomatoes, fresh market

*by Hayley Boriss, Junior Specialist
Henrich Brunke, Assistant Specialist
brunke@primal.ucdavis.edu
Agricultural Issues Center
University of California*

Overview

Although the early history of the tomato in the United States was characterized by the colonialist belief that the brightly colored fruit was poisonous, by the time commercial production began in the mid 1800s, the tomato was well established as a popular produce item in the American diet. By 2004, nearly 2 million tons of commercial fresh-market tomatoes were produced in the United States. In addition, 12 million tons of processing tomatoes were produced. In the United States the two tomato industries (fresh market and processing) are distinctly separate. Processing tomatoes account for the majority of tomato tonnage, while the comparatively higher prices of fresh market tomatoes make them higher ranked in terms of value.

Industry Characteristics

Florida and California are the top two fresh-tomato producing states in the United States, together comprising over two-thirds of total U.S. fresh tomato acreage. However, commercial production occurs in roughly 20 states and backyard gardens are common in all states (Economic Research Service (ERS)a).

In California, fresh tomatoes are grown in several counties during all seasons except winter. San Diego County is the leading producer in the spring and fall, while Fresno County dominates summer production. Conversely, tomato production in Florida lasts from October to June with predominant periods of production in April and May and again from November to January (ERSa). During the winter season, California's off-season, fresh tomatoes from Mexico are imported to provide the western United States with fresh tomatoes. The majority of Florida's winter crop is shipped and consumed in the eastern United States. Today, imports compliment seasonal production differences within the United States, enabling fresh market tomatoes to be sold in grocery stores year-round.

The fresh tomato market is oligopolistic in that the relatively small number of firms competing in the market has enabled these individual firms to affect prices. In 1997, fewer than 1000 farms were in production and fewer than 50 shippers controlled the movement of fresh tomatoes into wholesale, retail, and food service sectors (Thompson

and Wilson). In addition, much of the industry is vertically integrated, with companies owning the entire line of grower, packer, and shipping firms (Strange, Schrader, and Hartz).

Demand

Per capita consumption of fresh tomatoes has been increasing in recent years. Average annual per capita consumption in 1981 was 12.3 pounds and has steadily increased to 19.2 pounds in 2003, as noted in Figure 1. Part of the increase in consumption has been due to the increasing popularity of fresh market tomato use in salads and sandwiches, improved varieties, as well as a growing population of immigrants with preferences for high vegetable diets (ERSa). Tomatoes have also been marketed as a nutritional food, being promoted as a good source of Vitamin C, Vitamin A, and antioxidants. Tomatoes have also been promoted as a possible preventative against specific cancers (California Tomato Commission).

Exports

While the United States has remained a net importer of fresh tomatoes for decades, total U.S. fresh tomato exports have been increasing, reaching \$174 million worth in 2004 (ERSb). The North American Free Trade Agreement (NAFTA) partners—Canada and Mexico—are the largest export destinations for U.S. fresh tomatoes. In value terms, over 80 percent of U.S. fresh tomato exports were shipped to Canada alone in 2004. Combined with Mexico, exports to these U.S. northern and southern neighbors accounted for just over 93 percent of exports. Since 1989, the beginning of the Canadian-United States Free Trade Agreement (CUSTA), the value of U.S. exports to Canada has increased by 32 percent. Exports to Canada were highest in 2004 at \$141.7 million (ERSb). The majority of U.S. exports to Mexico occur during the summer and fall. The value of shipments to Mexico has been variable throughout the years but exports in 2004 reached \$19.9 million. The majority of U.S. fresh tomato exports to Mexico originate in California and the majority of fresh tomato shipments are round field-grown tomatoes, though smaller percentages of cherry tomatoes and Roma tomatoes are also shipped internationally.

In the global export market of fresh tomatoes, the Netherlands outpaces the nearest competitors by nearly \$150 million dollars, exporting just over \$1 billion worth in 2003. This was an increase of almost 70 percent from 2000. The next largest world exporter of fresh tomatoes was Spain with \$875 million worth in 2003 followed closely by Mexico's \$868 million. The U.S. ranked sixth in export value with \$192 million in 2003, just behind Canada (Food and Agricultural Organization of the United Nations (FAO)).

Supply

According to 2004 statistics from the National Agriculture Statistical Service (NASS), U.S. fresh market tomato production was valued at \$1.3 billion, the second highest ranked fresh market vegetable behind lettuce (\$2.1 billion). Florida typically outpaces California fresh market production in terms of acres harvested, higher yields and pounds produced, as well as higher season-average prices (NASS). In 2004, Florida harvested 42,000 acres and accounted for 42 percent of total U.S. production. In the same year

California's harvested acreage was slightly less at 37,000 acres, accounting for 30 percent of total U.S. production. NASS also reported 15 additional states producing a commercial fresh tomato crop in 2004, including Ohio, Tennessee, Georgia, and Virginia—the only four with more than 5,000 acres in production. Estimated total U.S. harvested acres in 2004 was 126,400 and has remained relatively constant over recent years as illustrated in Figure 2.

Despite the fact that yield statistics have been confounded by the practice of producers not fully harvesting fields in years when prices are low, fresh tomato yields in the U.S. have increased over time, from less than 118 cwt per planted acre in 1960 to a maximum of 307 cwt per acre in 2002 (Figure 3). The sharpest increase in yields occurred in the 1980s with the adoption of higher-yield varieties and drip irrigation systems (ERSa).

Prices for fresh tomatoes are especially sensitive to surplus and shortages of supply, causing variability in prices over the past decade as notable in Figure 4. Typically, the Florida price per ton has been higher than the California price because Florida's winter production receives elevated prices due to low supply. However bad weather and tightened supply during October and November of 2004 pushed prices upward before Florida production began in late November, making California's 2004 average prices higher than Florida's. Seasonality continues to be the leading factor shaping the fresh tomato industry, with production high in summer months and low in winter months. Efforts have focused on increasing production in the low-supply season.

Imports

Imports have made up a large portion of U.S. fresh tomato consumption for many years. In 2004, U.S. net imports of fresh tomatoes reached nearly \$900 million. Canada and Mexico, U.S. trading partners under NAFTA, are the main sources (the Netherlands follows as the third largest source) (Figure 5). After implementation of NAFTA in 1994, some tariffs were phased out in the 5 years between 1994 and 1998, while others were eliminated over a 10 period ending in 2003. However, U.S. tariffs can be reinstated to the pre-NAFTA Most Favored Nation rate until 2008, subject to threshold price and acreage conditions (ERSb).

Although Mexico was a substantial partner in trade prior to NAFTA, the total value of imports from Mexico increased 138 percent between 1993 to 2004. In 2004 imports from Mexico were valued at \$750 million. U.S. fresh tomato imports from Canada substantially increased as well. From 1989, the year the Canadian-US Trade Agreement (CUSTA) was implemented, to 2004, fresh tomato imports from Canada into the United States rose 889 percent, from \$2.8 million in 1989 to \$257 million in 2004. In 2004, Mexico and Canada combined accounted for roughly 95 percent of the \$1 billion U.S. fresh tomato import market.

Because U.S. field grown fresh tomato production is seasonal, Mexico is the predominant importer to the United States in the spring, fall and winter, with Canada providing the bulk of imports during summer months. Cuba was formerly an important

winter supplier of fresh tomatoes to the United States, however imports from Cuba were interrupted in the 1960s. This void prompted increases in winter production by both Florida and Mexico in an effort to capitalize on higher winter market prices given a decreased winter supply (Thompson and Wilson).

Value-Added Market for Greenhouse Tomatoes

The emergence of a greenhouse tomato production has begun to change the shape of the U.S. fresh market tomato industry. Greenhouse tomato production allows producers to grow fresh tomatoes in structures, sometimes using methods of climate control and alternative soils. Advantages of greenhouse production include uniform appearance and quality, consistency in production, increased yields per acre and enabling growers to more effectively sustain year-round production (Cook and Calvin). The United States is the largest market in North America for greenhouse tomatoes. The EU, Mexico, and Canada have all become large exporters of greenhouse tomatoes, much of which enters the United States. In 2005 U.S. imports of greenhouse tomatoes were larger than total domestic production of greenhouse tomatoes. Greenhouse tomatoes were also the leading type of import in 2004 as noted as noted in Figure 6. ERS has also attributed much of the general increase in imports over the past decade to a niche-market for high-quality greenhouse tomatoes in the United States, especially those of tomatoes-on-the-vine which are only grown in greenhouses and have gained in popularity.

In recent years U.S. and Canadian greenhouse production has begun to stabilize and as the niche becomes more conventional, premiums have begun to decrease. It has been estimated that 90 percent of Canadian production is greenhouse. Mexican greenhouse production however, continues to increase with greenhouse tomatoes accounting for an 8 percent share of total Mexican production. Although Mexican production has a comparative advantage given lower labor cost and favorable weather for winter production, the high capital investment and inexperienced management have prevented Mexico from capturing a larger share of production (Cook and Calvin).

The rise of the greenhouse industry with its intensive initial capital investment and heterogeneity among production methods has also prompted trade disputes between the United States, Canada, and Mexico, where the definition of greenhouse tomatoes has become an issue. Compared to the Mexican industry, U.S. and Canadian greenhouses typically employ higher, more costly technology, including the use of climate control and hydroponics, which utilizes alternatives to soil. Higher-cost producers wish to differentiate between lower-cost and higher-cost production and redefine greenhouse tomatoes to denote production differences, although some critics suggest this is an attempt at protectionist policies for higher-cost producers. For more information on the North American greenhouse industry see the (online) Cook and Calvin report cited below.

Sources

California Tomato Commission. Dataweb. Accessed July 05.
Available at: www.tomato.org

Cook, R. and Calvin, L. April 2005. "Greenhouse Tomatoes Change the Dynamics of the North American Greenhouse Tomato Industry." Economic Research Service Report Number 2. Available at: <http://www.ers.usda.gov/Publications/ERR2/>

Food and Agriculture Organization of the United Nations. Agriculture Statistics. Available at: <http://faostat.fao.org/faostat/collections?subset=agriculture>

Strange, M., Schrader, W., and Hartz, T. 2000. "Fresh-Market Tomato Production in California." University of California Vegetable Research and Information Center. Publication 8017. Available at: <http://anrcatalog.ucdavis.edu/pdf/8017.pdf>

Thompson, G, Wilson, P. 1997. "The Organizational Structure of the North American Fresh Tomato Market: Implications for Seasonal Trade Disputes". *Agribusiness*, Vol. 13, (5) 533-547

United States Department of Agriculture, Economic Research Service. Briefing Room. Tomatoes: Background. Accessed July 2005(a). Available at: <http://www.ers.usda.gov/Briefing/Tomatoes/background.htm>

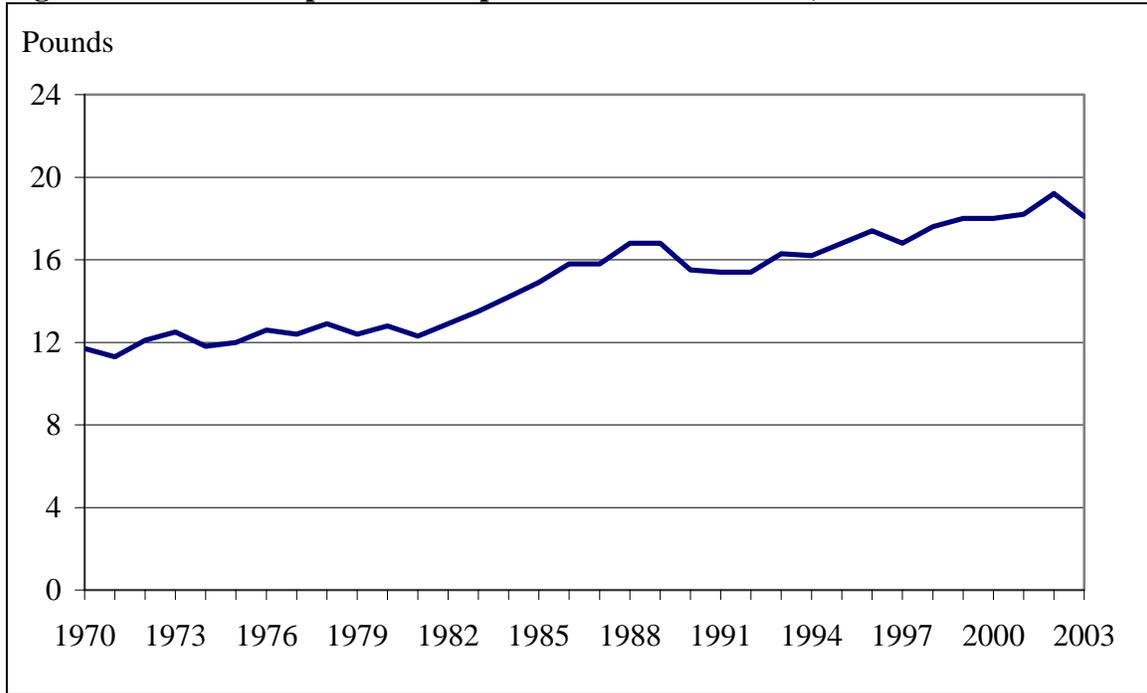
United States Department of Agriculture, Economic Research Service. Briefing Room. Tomatoes: Trade. January 2005(b). Available at: www.ers.usda.gov/Briefing/Tomatoes/trade.htm

United States Department of Agriculture, Economic Research Service. Vegetables and Melons Yearbook 2005. Available at: <http://usda.mannlib.cornell.edu/data-sets/specialty/89011/>

United States Department of Agriculture, National Agricultural Statistical Service. Commodity Reports. Available at: <http://www.usda.gov/nass/pubs/estindx.htm>

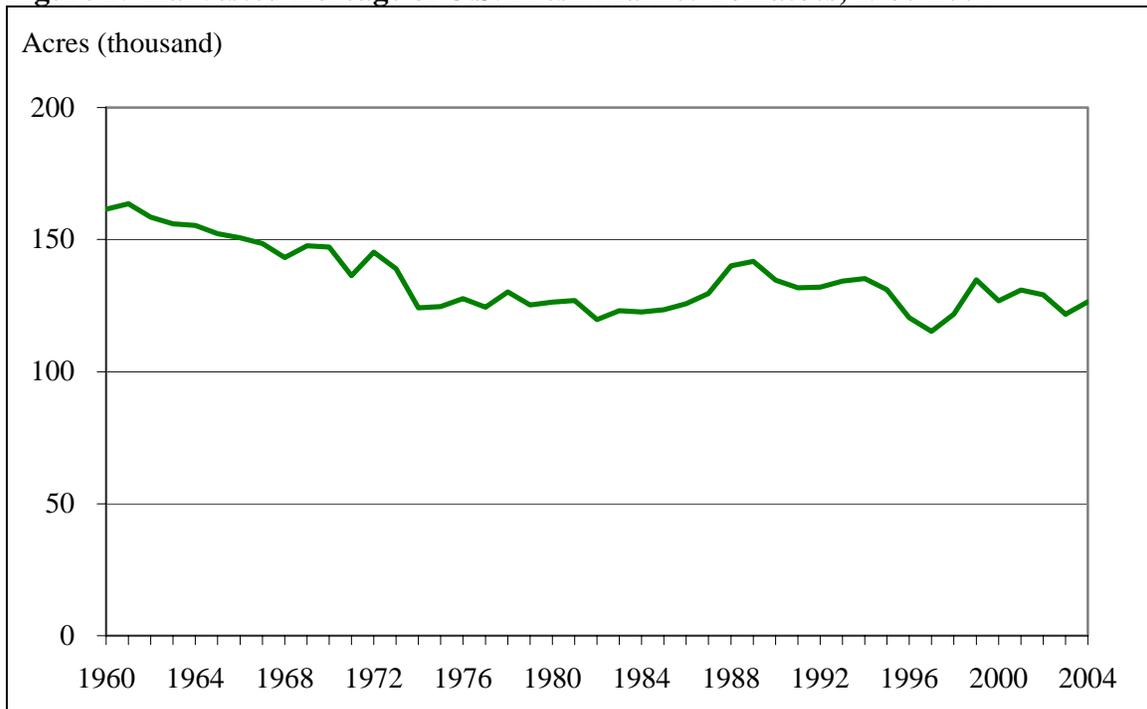
FIGURES

Figure 1. U.S. Per-Capita Consumption of Fresh Tomatoes, 1970-2003



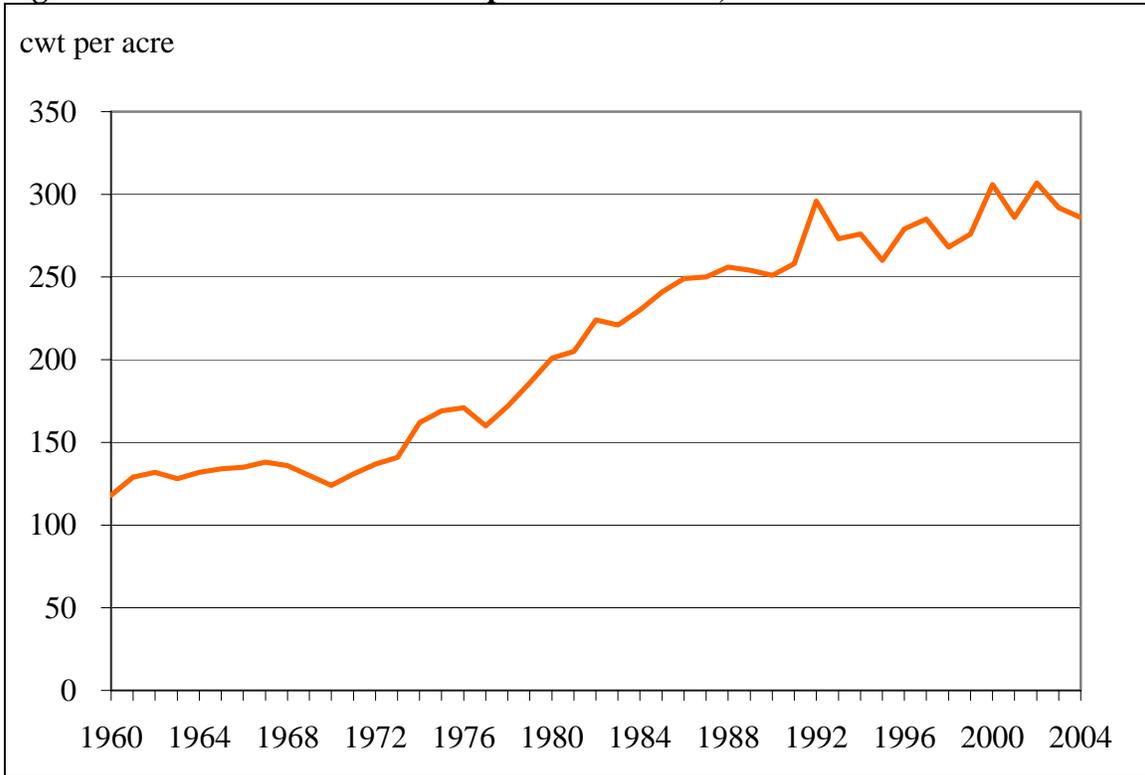
Source: USDA Economic Research Service

Figure 2. Harvested Acreage of U.S. Fresh Market Tomatoes, 1960-2004



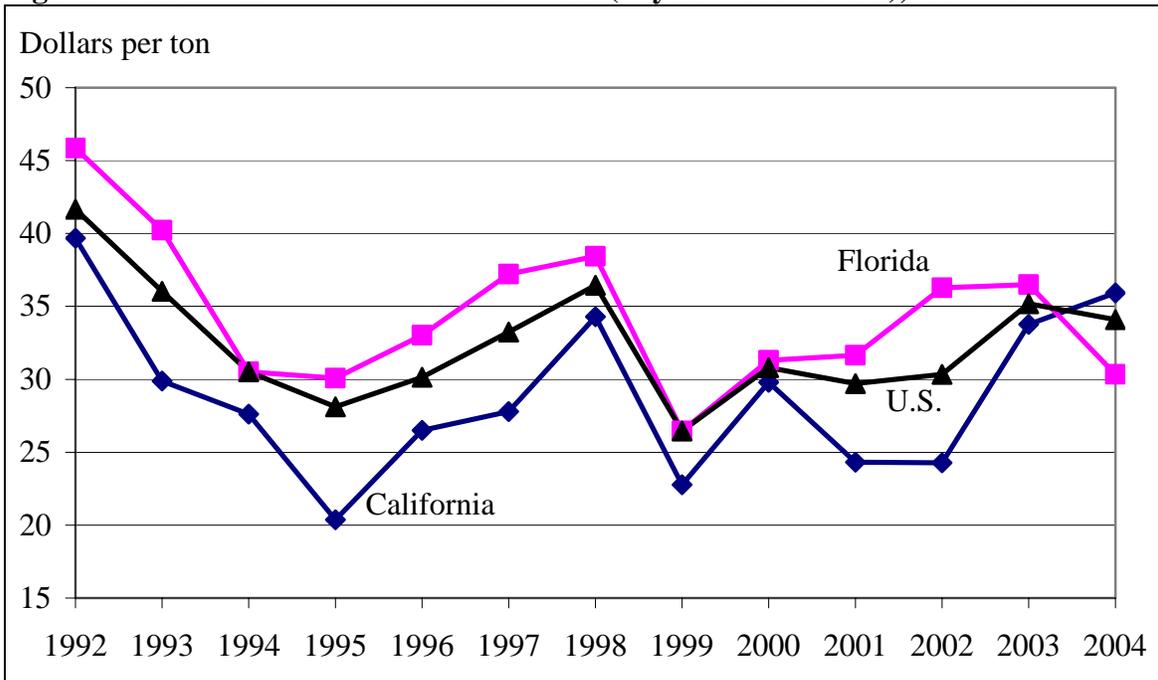
Source: USDA Economic Research Service, Vegetables and Melons Yearbook

Figure 3. U.S. Fresh Tomato Yield per Planted Acre, 1960-2004



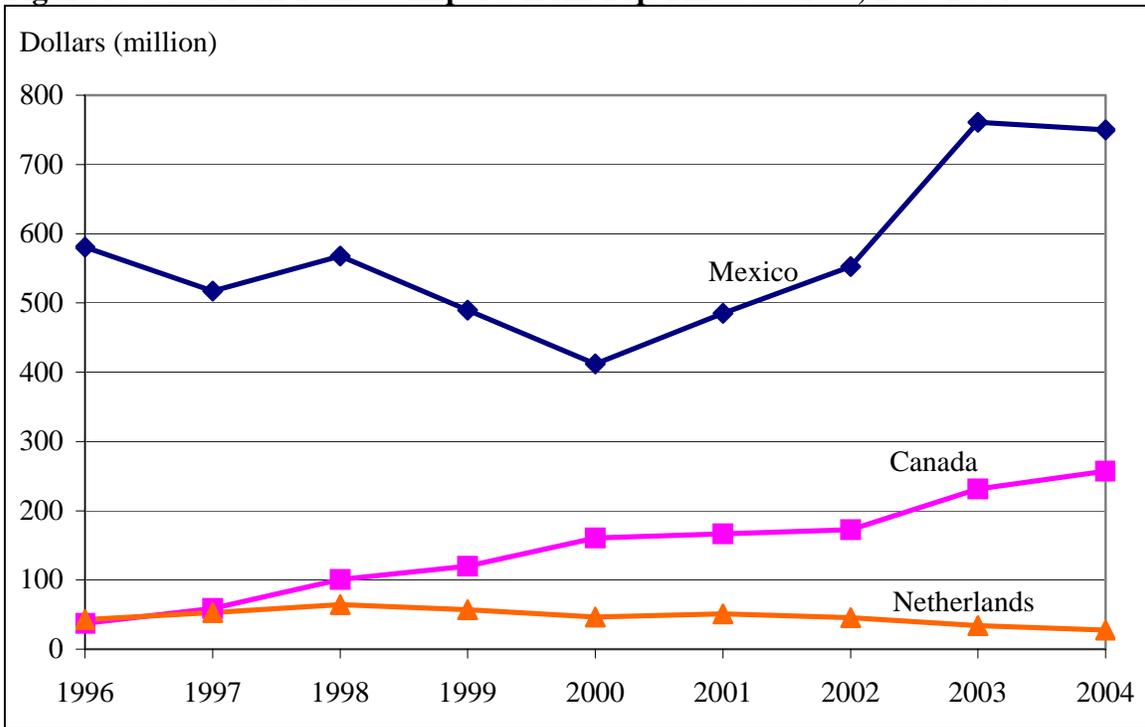
Source: USDA Economic Research Service, *Vegetables and Melons Yearbook*

Figure 4. U.S. Fresh Market Tomato Prices (in year-2000 dollars), 1992-2004



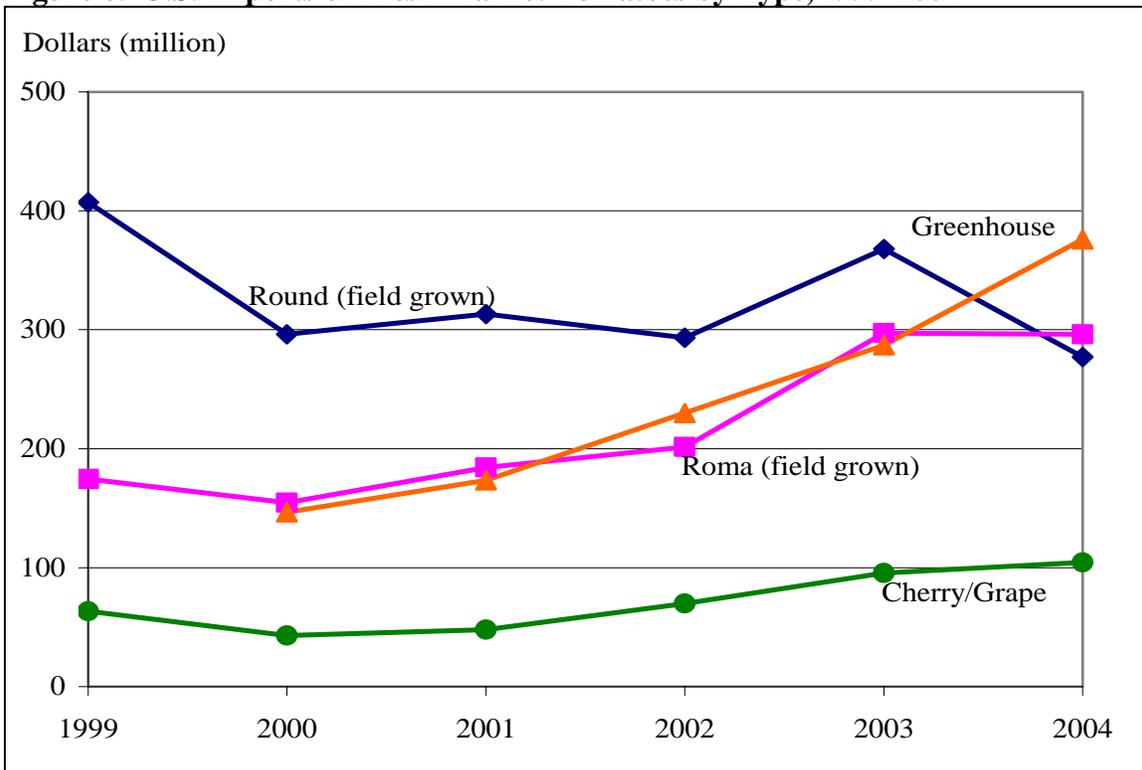
Source: USDA Economic Research Service, *Vegetables and Melons Yearbook*

Figure 5. U.S. Fresh Tomato Imports from Top Three Sources, 1989-2004



Source: United States International Trade Commission Data

Figure 6. U.S. Imports of Fresh Market Tomatoes by Type, 1999-2004



Source: USDA Economic Research Service, U.S. Fresh-Market Tomatoes at a Glance