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## Commodity Profile: Garlic

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### **Overview**

Garlic was introduced into the United States in the 1700s, but its popularity did not begin to increase until the 1920s. Garlic is thought to have originated in the regions of central Asia and historically was used for medicinal purposes. Today, garlic is valued more for its flavoring and used in a wide variety of foods, although it is often still thought to possess medicinal qualities. In the United States, California is the major garlic producing state followed by Oregon and Nevada. The two most prevalent varieties grown commercially are California Early and California Late.

### **Industry Structure**

Garlic is marketed as a fresh or dehydrated product, or as certified seed. The majority of garlic is dehydrated and used in a wide variety of processed foods. Dehydrated garlic accounts for roughly 75 percent of U.S. garlic consumption. A more limited amount of garlic is planted for seed stock. Typically, garlic grown for dehydration or for seed stock is not utilized in the fresh market. Another distinction is that garlic used for the fresh market is hand picked. Consequently, three distinct sectors have developed with separate production and distribution channels specific to the end use (Arizona State University).

Nearly all commercial garlic production is grown under contract between grower and buyer. Much of the commercial product is shipped to specific locations from which it is either processed for dehydration or moved to fresh market retail sales. The garlic industry remains concentrated in both the fresh and dehydrated markets. Only a handful of large shippers control the movement of fresh product and an even smaller number of firms control almost all of processing of the dehydrated product (Economic Research Service (ERS) 2000). Gilroy, California is known as the garlic capital of the United States, largely because that is where a large portion of U.S. garlic is grown, processed, and shipped. The city also promotes itself as the home to the annual garlic festival each summer.

## **Demand**

According to the USDA, no other vegetable has exhibited such strong sustained demand growth in the United States as garlic. Per capita consumption of garlic increased in the 1980s and 1990s, rising from 1.3 pounds in 1990 to 3.3 in 1999. Per capita consumption tapered off somewhat in the 2000s with 2004 estimates at 2.6 pounds per capita (Figure 1). Much of the increase in demand has been attributed to both an increased affinity for its flavor and the promotion of the health benefits of garlic, which include antibiotic as well as antioxidant effects, and aiding in the reduction of cholesterol and blood pressure levels (ERS 2000).

## **Exports**

Total value of U.S. garlic exports exceeded \$21 million in 2004 with the largest export markets for U.S. garlic being Canada and Mexico (Figure 2). In 2004 Canada, the number one destination for U.S. garlic, received \$6.4 million in dried and fresh garlic imports, while Mexico received \$3.4 million in mostly fresh imports. Combined, the North American Free Trade Agreement (NAFTA) partners accounted for roughly 46 percent of U.S. exports in 2004. In 2004, dried garlic accounted for 40 percent of the total export value, followed by fresh garlic exports which accounted for 35 percent and powder which accounted for 19 percent (FAS). The value of exports however has decreased since 1997, and conversely the value of imports has increased.

## **Supply**

Globally, China is by far the largest producer of garlic, producing over 75 percent of world tonnage (Food and Agricultural Organization of the United Nations (FAO)). The United States ranks fourth behind India and the Republic of Korea.

In the United States, the majority of fresh and processing garlic production and acreage is concentrated in California. In 2004, California accounted for 82 percent of total U.S. area harvested, followed by Oregon with 14 percent and Nevada with 4 percent. Total U.S. harvested acreage of garlic increased from 23,000 acres in 1992 and peaked in 1999 with 40,000 acres (Figure 3). However, in recent years acreage has decrease from that high to 31,600 in 2004. The share of U.S. consumption produced domestically has continued to decrease, from 82 percent in 1990 to 56 percent in 2004.

U.S. production of garlic has continued to increase throughout the last two and a half decades in response to higher demand (Figure 4). Production peaked in 1999 given peak acreage and peak yields at 185 cwt per acre in 1999 (Figure 5). Production, acreage, and value of production have all decreased since 1999. The total value of U.S. garlic production has steadily decreased, falling 48 percent, from a high of \$268.8 million in 1997 to \$138.5 million in 2004 (Figure 6). In 2004, average yield per acre was 165 cwt. Prices have been highly variable over time, but have decreased continuously since the 1997 high of \$43.43 (in 2000 dollars), falling to \$24.49 in 2004 (Figure 7).

## **Imports**

The United States is the world's largest import market for fresh garlic, followed closely by Indonesia, France, and Brazil (FAO). The United States became a net importer

(imports less exports) of garlic in 1995 and then again in 1998 up to the present. In 2004, the United States was a net importer by \$53 million and total imports including fresh and dried product amounted to \$74 million. Of this total, 76 percent was from fresh imports, 15 percent from dried garlic flakes, and 9 percent from garlic powder.

The leading importers of garlic into the United States in 2004 were China, Mexico, and Argentina. Chinese shipments to the United States in 2002 surpassed Mexican and by 2004, China was responsible for 75 percent of total U.S. garlic imports (Figure 8). Mexico was the second largest garlic importer into the United States in 2004, accounting for 13 percent of total imports followed by Argentina with 7 percent.

### **Trade Issues**

Today (2004), China is the dominant source of imported garlic in the United States despite the imposition of a 377 percent duty against fresh Chinese garlic imports imposed in 1994. Prior to imposition of the antidumping duties China was a major exporter of garlic to the United States. In 1994, the Fresh Garlic Producers Association filed an anti-dumping petition claiming the price of Chinese garlic was less than the cost of production in China and was harming the U.S. industry. The tariff succeeded in decreasing Chinese imports of fresh garlic for several years, allowing Mexico to redeem some of China's former share of U.S. imports of fresh garlic (Figure 9). However, garlic imports from China have increased by over 250 percent between 2001 and 2004, while Mexican imports have declined since 2001. The increase in Chinese imports is said to be due to a loophole in the legislation involving the way imports of fresh garlic from new shippers, who were not involved in the antidumping order, are handled.

While additional legislation may close this dumping loophole, thereby decreasing imports of fresh Chinese garlic in the short run, issues of circumvention and market definitions could persist. Chinese exporters may effectively circumvent the 1994 order by shipping "like products" or using third countries to ship through. An additional concern includes increased exports of dehydrated and processed product which is not covered under the 1994 order (United States International Trade Commission, Arizona State University, Gilroy Dispatch, and Los Angeles Times).

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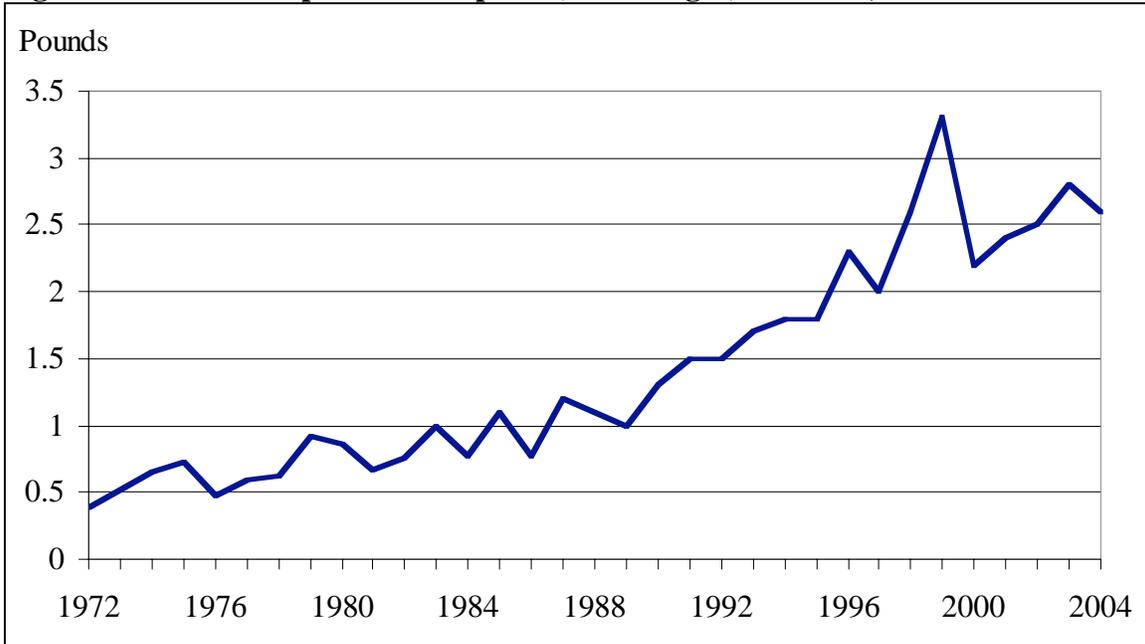
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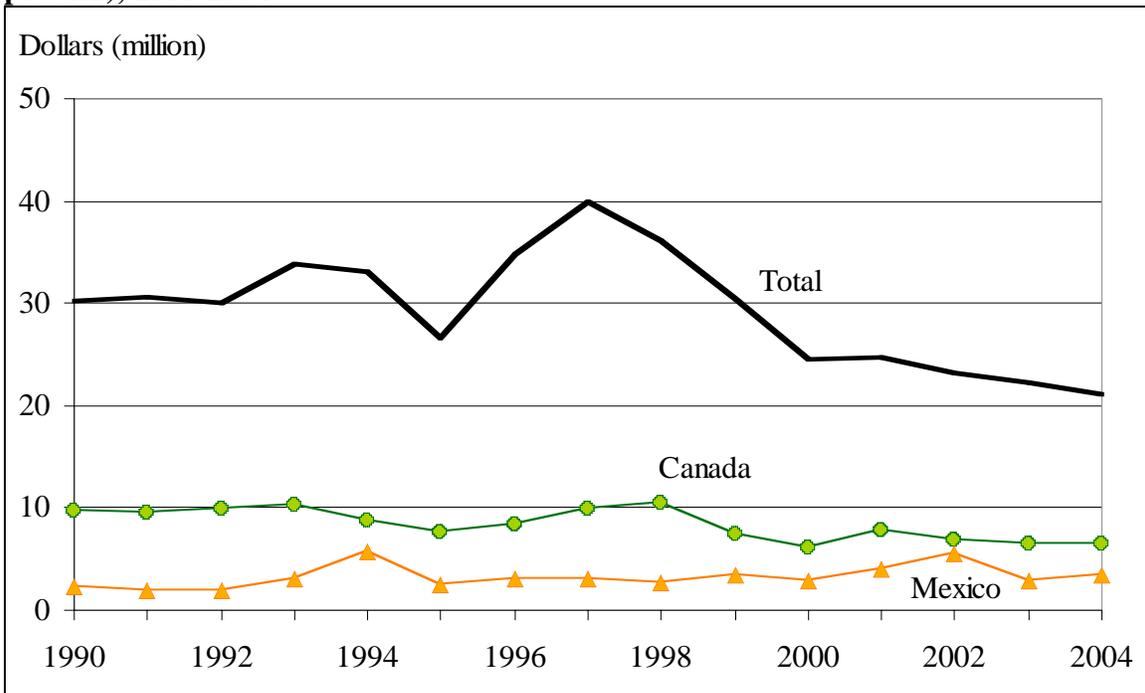
**FIGURES**

**Figure 1. U.S. Per Capita Consumption (farm weight) of Garlic, 1972-2004**



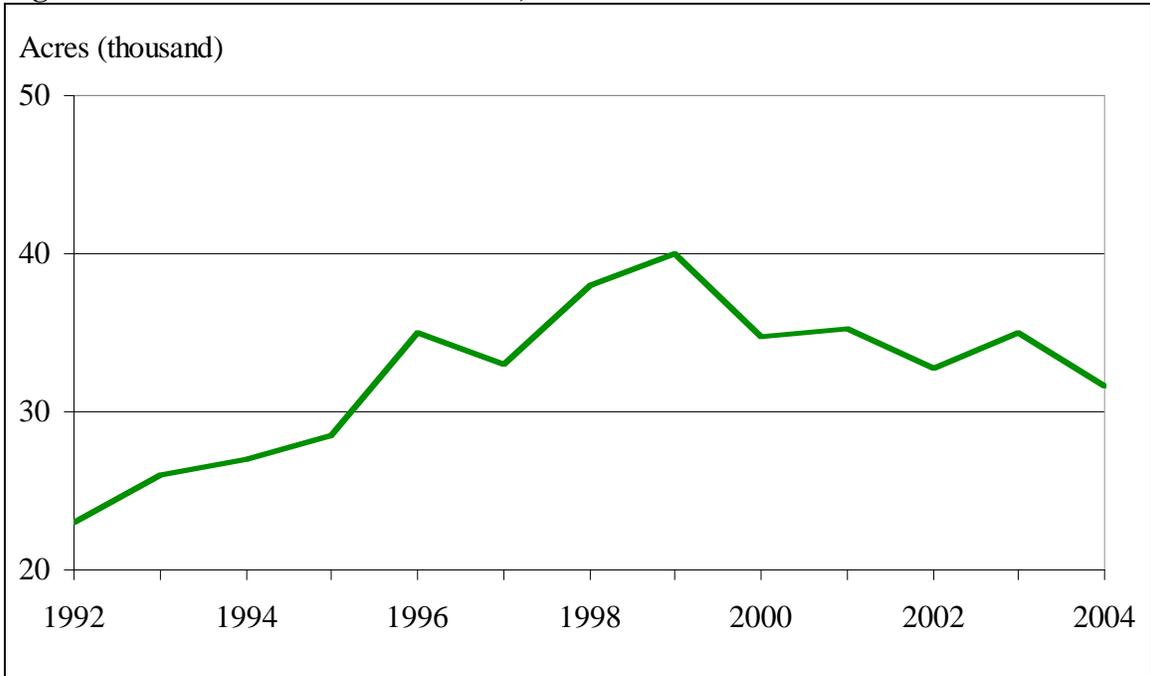
Source: USDA Economic Research Service, Per Capita Data System

**Figure 2. U.S. Garlic Export, Total and Leading Markets (fresh, dried, and powder), 1990-2004**



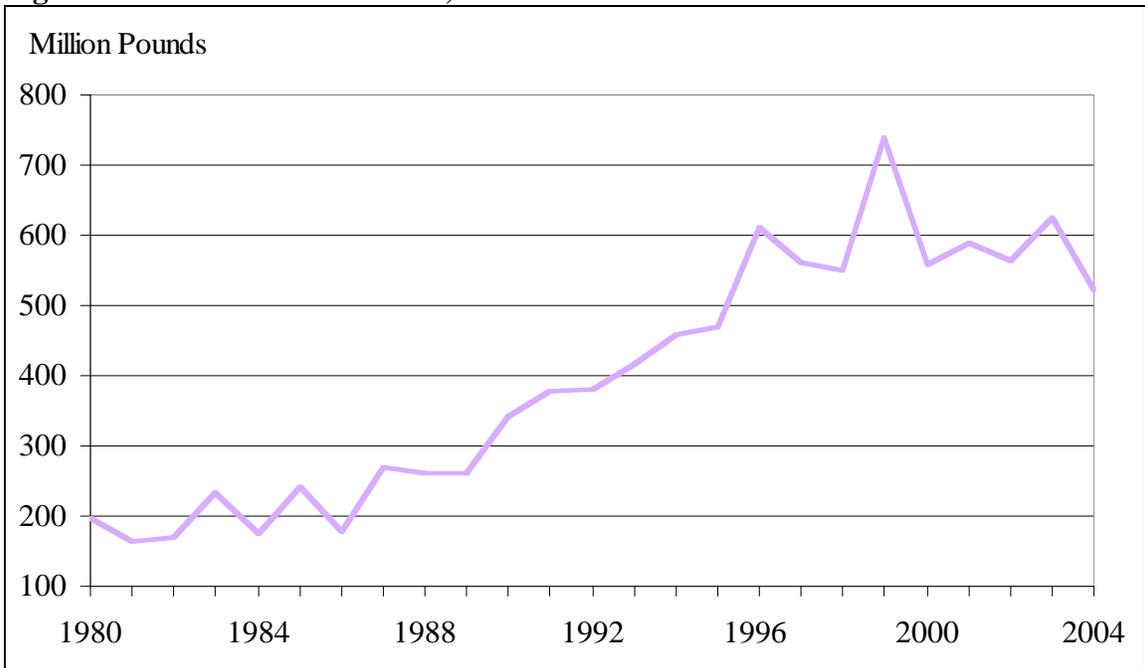
Source: USDA Foreign Agricultural Service

**Figure 3. U.S. Harvested Garlic Acres, 1992-2004**



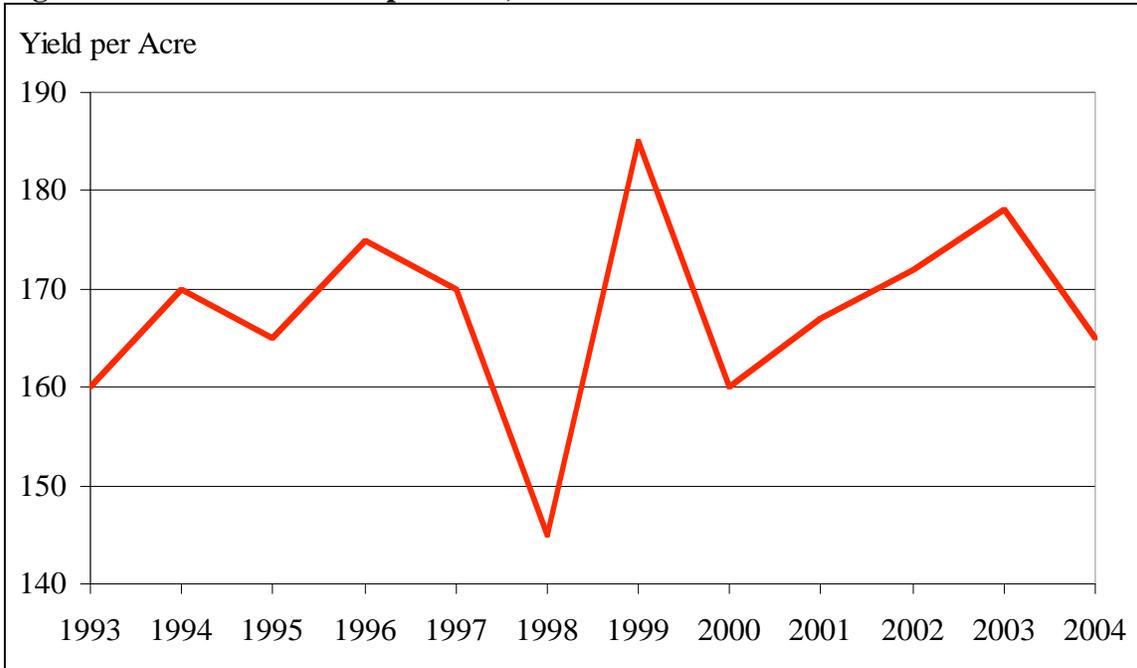
Source: *USDA Economic Research Service Vegetables and Melons Yearbook*

**Figure 4. U.S. Garlic Production, 1992-2004**



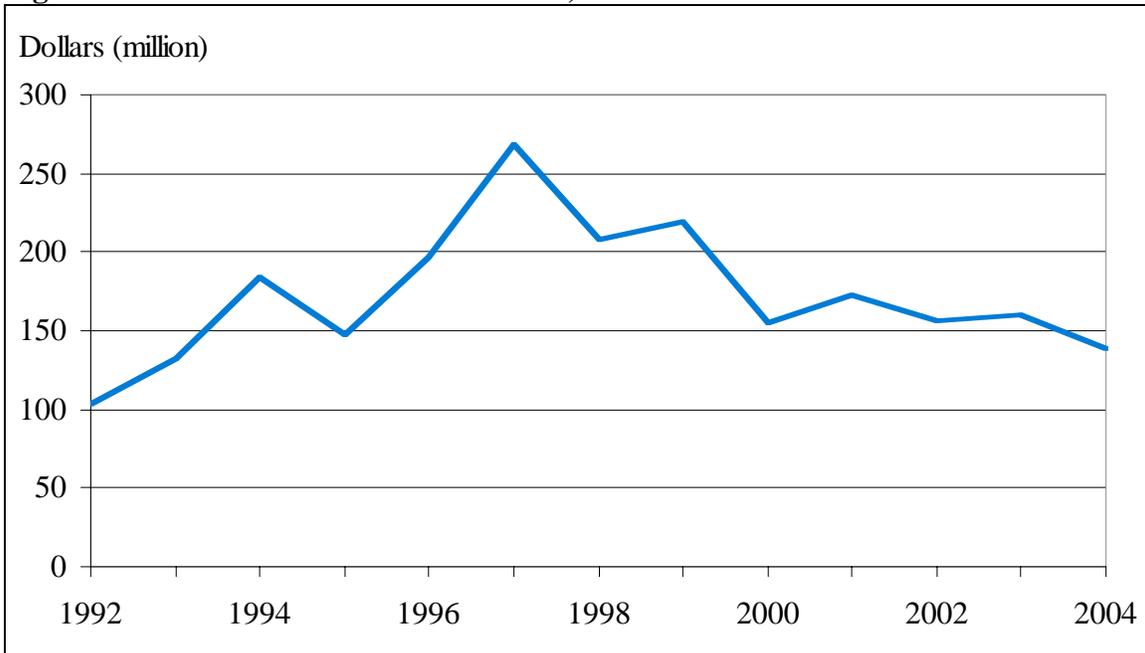
Source: *USDA National Agricultural Statistics Service, Vegetables Annual Summaries*

**Figure 5. U.S. Garlic Yields per Acre, 1992-2004**



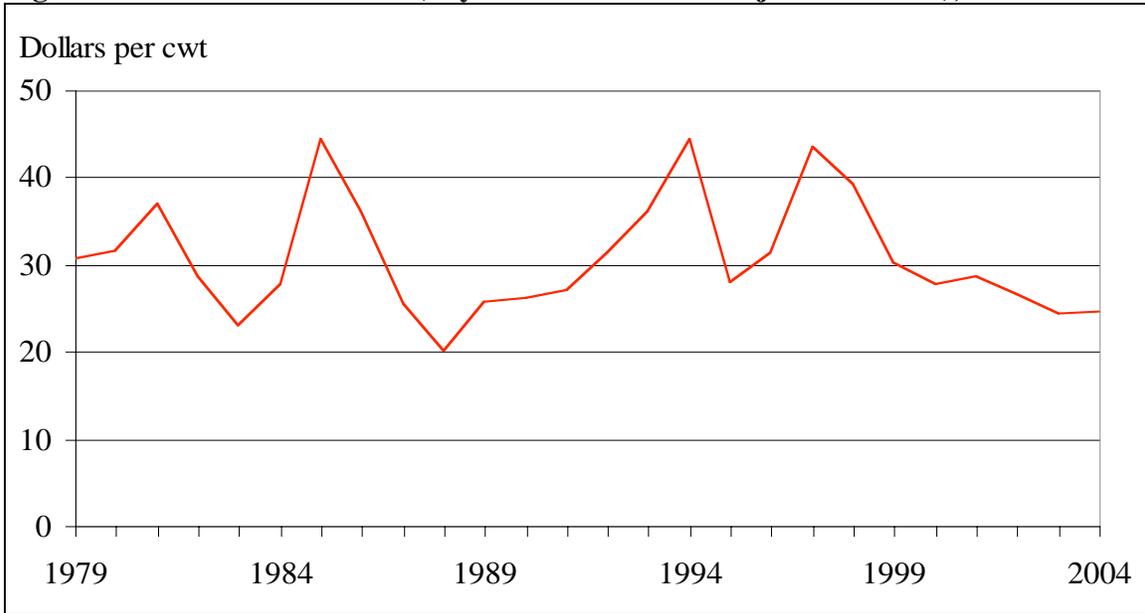
*Source: USDA National Agricultural Statistics Service, Vegetables Annual Summaries*

**Figure 6. Value of U.S. Garlic Production, 1992-2004**



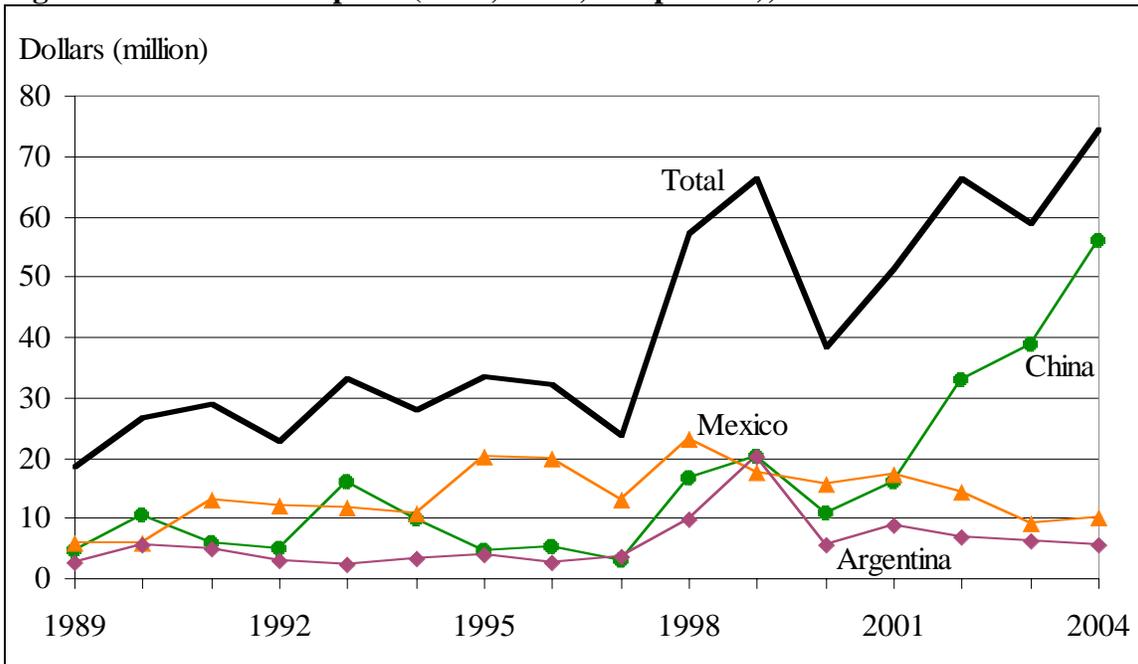
*Source: USDA Economic Research Service, Vegetables and Melons Yearbook*

**Figure 7. Price of U.S. Garlic (in year 2000 inflation-adjusted dollars), 1979-2004**



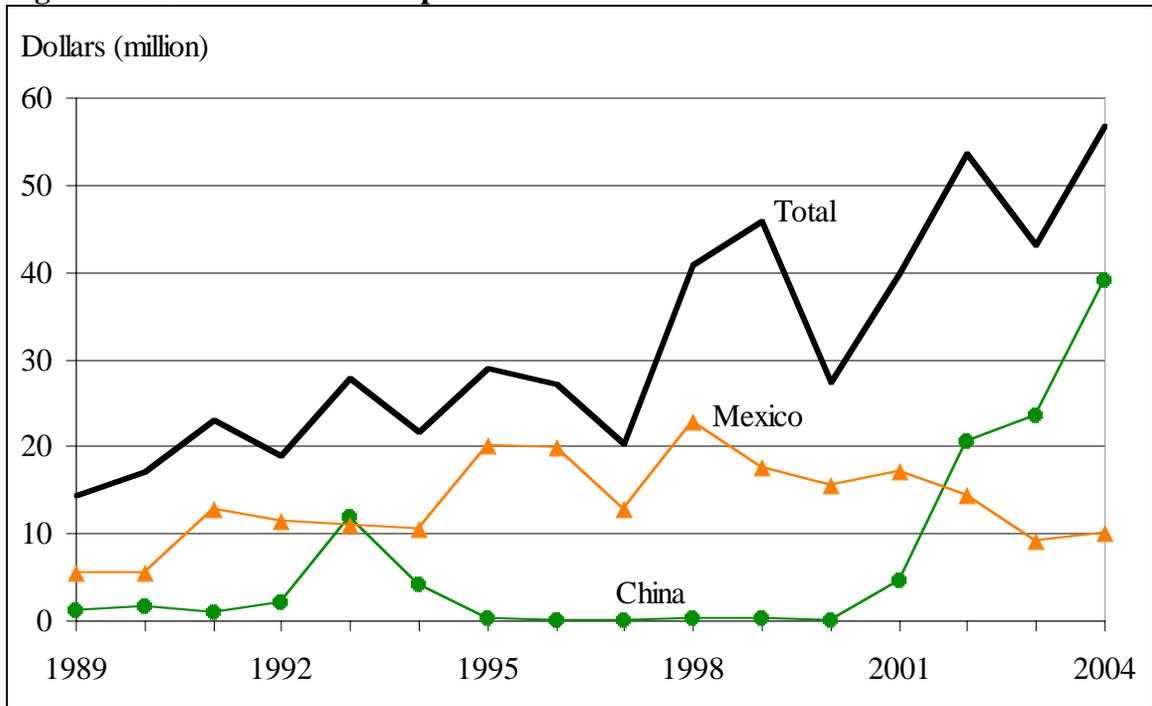
Source: USDA Economic Research Service, *Vegetables and Melons Yearbook*

**Figure 8. U.S. Garlic Imports (fresh, dried, and powder), 1989-2004**



Source: USDA Foreign Agricultural Service

**Figure 9. U.S. Fresh Garlic Imports 1989-2004**



*Source: USDA Foreign Agricultural Service*