

## Commodity Highlight

### *The U.S. Pistachio Nut Industry*

The pistachio nut originated in the Middle East, where it is still popular today. The nut was introduced into Europe in the first century A.D. where it spread throughout the Mediterranean countries. The tree was first introduced in the United States in the mid-1800s. It did not, however, become a commercial industry until the mid-seventies. The U.S. industry celebrated its 25<sup>th</sup> anniversary in 2001.

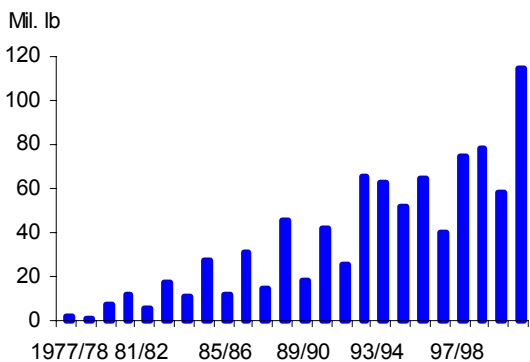
### *California, Home to the U.S. Industry*

U.S. commercial pistachio production is concentrated in California's San Joaquin Valley. The trees need winters with temperatures cold enough to break bud dormancy and summers that are long and hot. The trees are very drought tolerant and do not thrive under damp, humid conditions. The San Joaquin Valley perfectly suits these requirements and has become the center of the U.S. industry, accounting for about 98 percent of domestic production. Small quantities of commercial pistachio production can also be found in Arizona, New Mexico, Nevada, and Texas.

Production has grown rapidly in the United States, increasing from 1.8 million pounds (shelled basis) on 1,700 acres in 1977 to a record 243 million pounds on 74,600 acres in 2000 (fig. 6). The rapid growth in the U.S. industry has resulted in it becoming the world's second biggest producer, behind Iran, but ahead of Turkey, Syria, and China (fig. 7).

Figure 6

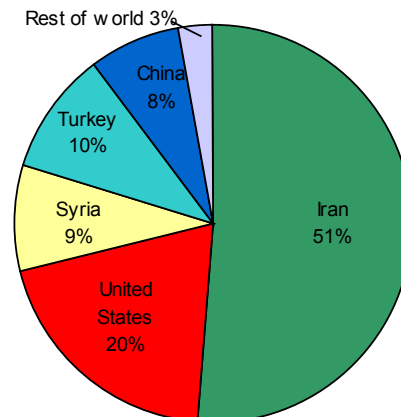
#### **U.S. pistachio production, 1977/78-2000/01**



Source: National Agricultural Statistics Service, USDA.

Figure 7

#### **Top five world producers of pistachio nuts\***



\*Average share of 1998-2001 world production.

Source: Food and Agriculture Organization of the United Nations.

Pistachio trees are alternate bearing. They produce a large crop one year followed by a much smaller crop the next year. While producers may have learned to moderate some of the alternate-bearing tendency, they are still unable to control it. For instance, 1997/98 and 1998/99 present two unusual years of increased production, followed by a 26-percent decline the next year only to increase 97 percent in 2000/01, when it set a record. To compensate for off-year production, the industry builds inventories during on-years to try to maintain a steady supply throughout. As a result of the rapidly growing industry and its ability to maintain supply stability, imports have fallen off sharply. During the industry's infancy, imports accounted for well over half of U.S. supply. By the late nineties, however, that share declined to less than 1 percent.

In the United States, the bulk of the pistachios are harvested in September. All of the harvesting is done mechanically by shaking the trees. Once harvested, they are hulled and dried to prevent staining on the shell. The highest valued nuts have split shells (naturally opened) and green kernels, with the deeper the green the more desirable.

## ***Pistachios Are Mostly Eaten As a Snack Food***

In the United States, most pistachio nuts are consumed as snack food and purchased in shell. They are also used by the food industry as ingredients in making confectioneries, ice cream, candies, sausages, baked goods, and flavorings. In the Middle East, pistachio nuts are important ingredients in both main dishes and desserts. With the growth in popularity of ethnic foods in this country and the growing population of Middle Eastern immigrants, there may be some shift away from using the nut only as a snack item.

About 80 percent of the pistachio nuts are sold in shell. The remaining 20 percent, which are shelled, go to the food industries. Prior to the mid-seventies, consumers had to rely on imports, mostly from the Middle East for their pistachios. These nuts were dyed red to hide stains on the shell and to make the nuts stand out in vending machines. With the growth of the U.S. industry and its harvesting methods, staining has become less of a problem. As a result, only a small amount of pistachio nuts are still dyed red, mostly because there are still people who prefer them that way.

## ***Export Markets Very Important To Pistachio Industry***

Since the mid-nineties, an average of 44 percent of the U.S. pistachio crop has been exported each season. Hong Kong is the major market for U.S. in-shell pistachio nuts, followed by Belgium, Italy, and Germany. China's market has grown rapidly in the past few years after being virtually nonexistent. It is assumed, however, that much of what is shipped to Hong Kong goes to mainland China, and in that way China has long been an important market.

Japan, Canada, and Israel account for almost 80 percent of exports of the shelled pistachio nuts. Until 1998/99, Hong Kong was the major market, but they have reduced their purchases of shelled nuts in favor of the less expensive in-shell nuts. Together, shelled and in-shelled exports accounted for \$44 million in 2000/01.

## ***Pistachio Consumption Growing Rapidly Since the Late Nineties***

Americans in general are not big nut eaters, and consumption lags far behind other horticultural products, such as fruit and vegetables. For example,

Table 16--Pistachios: Supply and utilization (shelled basis), 1970/71 to date

| Season<br>1/ | Utilized<br>production | Loss<br>and<br>exempt 2/ | Marketable<br>production | Imports          | Beginning<br>stocks | Total<br>supply 3/ | Ending<br>stocks | Exports | Consumption<br>Total | Per<br>capita |
|--------------|------------------------|--------------------------|--------------------------|------------------|---------------------|--------------------|------------------|---------|----------------------|---------------|
|              |                        |                          |                          | --1,000 pounds-- |                     |                    |                  |         |                      |               |
| 1990/91      | 42,047                 | --                       | 42,047                   | 853              | 10,045              | 52,945             | 16,864           | 8,682   | 27,399               | 0.11          |
| 1991/92      | 25,667                 | 190                      | 25,476                   | 250              | 16,864              | 42,590             | 6,072            | 15,413  | 21,104               | 0.08          |
| 1992/93      | 65,585                 | 223                      | 65,362                   | 396              | 6,072               | 71,830             | 17,595           | 27,763  | 26,471               | 0.10          |
| 1993/94      | 62,359                 | 448                      | 61,911                   | 494              | 17,595              | 80,000             | 25,672           | 21,066  | 33,262               | 0.13          |
| 1994/95      | 51,375                 | 125                      | 51,250                   | 732              | 25,672              | 77,654             | 16,825           | 25,275  | 35,554               | 0.14          |
| 1995/96      | 64,681                 | 5,177                    | 59,504                   | 422              | 16,825              | 76,751             | 13,795           | 31,540  | 31,417               | 0.12          |
| 1996/97      | 40,425                 | --                       | 40,425                   | 944              | 13,795              | 55,163             | 7,696            | 32,202  | 15,266               | 0.06          |
| 1997/98      | 74,930                 | --                       | 74,930                   | 417              | 7,696               | 83,043             | 9,742            | 36,150  | 37,150               | 0.14          |
| 1998/99      | 78,208                 | --                       | 78,208                   | 549              | 9,742               | 88,499             | 21,264           | 25,793  | 41,443               | 0.15          |
| 1999/00      | 58,083                 | --                       | 58,083                   | 262              | 21,264              | 79,608             | 10,462           | 19,787  | 49,359               | 0.18          |
| 2000/01 3/   | 114,164                | --                       | 114,164                  | 862              | 10,462              | 125,489            | 33,329           | 21,553  | 70,607               | 0.25          |

N.A. = not available. -- = Negligible amounts.

1/ Season beginning September 1. 2/ Inedibles and noncommercial usage. 3/ Preliminary estimates.

Sources: Economic Research Service, and National Agricultural Statistics Service, USDA; California Pistachio Commission; and Bureau of Census, U.S. Department of Commerce.

in 2001, the average American consumed 13 pounds of fresh oranges, 8 pounds of fresh grapes, and 6 pounds of fresh broccoli. Even consumption of less popular fruit and vegetables, such as mangoes, kiwifruit, and artichokes, exceeded that of most tree nuts.

Among domestically produced tree nuts, pistachio nut consumption ranks low. Americans consume more almonds, hazelnuts, pecans, and walnuts than pistachios.

Even though pistachio nut consumption is small, it has been growing rapidly, about 9 percent annually, with the rate jumping to 18 percent a year over the past 4 years. In 2000/01, Americans consumed about one-quarter of a pound of pistachio nuts per person, the largest amount on record (table 16). Consumption

is closely tied to production, and the rapid increase in consumption in the past few years is partially attributed to record-sized crops, usually accompanied by lower prices.

Consumers are also increasing their consumption of pistachios because of the health benefits attributed to nuts. Research has found that pistachio nuts are rich in calcium, Vitamin B-6, thiamin, phosphorus, iron, magnesium, copper, and fiber. A recent study found that by eating two ounces of pistachios a day could lower an adult's cholesterol level significantly. Pistachio nuts have monounsaturated fat, similar to other nuts, as well as olive oil and avocados and are cholesterol free. Due to the continued publicity surrounding these findings, and the lower prices due to record crops, pistachio consumption can be expected to increase over the next several years.