

The Strategic Marketing Institute
Working paper

The Market for Fresh Snap Beans

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Production and supply of snap beans

Snap beans (also referred to as green beans or string beans) are produced and marketed as fresh, canned or frozen products. Bush beans and pole beans are the two most important types of snap beans that are available on the market. Most of the bush types are harvested mechanically. Currently most of the snap beans are produced in open fields. Although some sources indicate greenhouse production of snap beans, reliable information and data that show the size and market share of commercial greenhouse/hydroponic production of snap beans are not available.

With about 60% of the total output, the U.S. is the largest producer of snap beans. Other major producing countries include France, Mexico, Iraq and Argentina. According to the USDA's National Agriculture Statistical Service, in 2002, there were about 11,343 farms in the U.S. This was 9% up from 1997. These farms produced both fresh-market and processed snap beans on 307,101 acres (Table 1). Like production of other agricultural commodities, snap bean production is becoming more concentrated. In 2002, just 111 farms (about 1% of the total farms) accounted for 34% of the snap bean harvested area. On the other extreme of the continuum, 57% of the farms accounted for less than 1% of the total harvested area. These are very small farms that operated between 0.1 and 0.9 acres.

Table 1: U.S. snap beans harvested for sales (2002 census data)

| | No. of farms | Acres |
|----------------------|--------------|---------|
| Total Harvest | 11,343 | 307,101 |
| 0.1 to 0.9 acres | 6,433 | 1,752 |
| 1.0 to 4.9 acres | 2,379 | 4,148 |
| 5.0 to 14.9 acres | 547 | 4,262 |
| 15.0 to 24.9 acres | 244 | 4,637 |
| 25.0 to 49.9 acres | 424 | 14,882 |
| 50.0 to 99.9 acres | 517 | 34,892 |
| 100.0 to 249.9 acres | 505 | 74,861 |
| 250.0 to 499.9 acres | 183 | 62,604 |
| 500.0 acres or more | 111 | 105,064 |

Source: USDA, National Agricultural Statistics Service

Most of the snap beans that are produced in the U.S. are for processing. On average, it is estimated that about 75% of the total snap bean production is for processing (50% for canning and 25% for freezing), while the remaining 25% is grown for the fresh market. There is a slight increase in the production of snap beans both for processing and for fresh market in recent years. Snap bean acreage for processing has increased from about 197,000 acres in 2003 to 210,620 acres in 2005. Production area of fresh-market snap beans has also increased from 92,700 in 2004 to 96,700 acres in 2005.

In 2005, total value of U.S. snap bean production was estimated at \$402.4 million. About 71% of this came from sales of fresh-market snap beans. The total value of fresh-market snap beans has increased from \$261.0 million in 2004 to \$286.9 million in 2005. These

figures are smaller compared to the market value of some other vegetable products (e.g. tomato).

A majority of the processed snap beans in the U.S. is produced under processor contracts that require specific product attributes and services. This includes specifications on types of cultivars, size of acreage and production, planting and harvest schedules, and various recommended growing and managing practices. Bush beans are the most common snap beans that are produced under contract to processors.

Snap beans are grown in almost all states. It appears that there is no significant overlap between the production of fresh-market snap beans and snap beans for processing in the states. This is mainly due to the differences in snap bean varieties and geographical location of processing (canning or freezing) plants. Table 2 presents area and production for contracted processing in selected snap bean producing states. As shown in the table, production for processing appears to be dominated by states in the Midwest. This includes states like Wisconsin, Illinois, and Michigan. Other major processed snap bean producing states include New York and Oregon. Wisconsin is the leading producer of snap beans for processing, followed by Oregon and New York.

Table 3: Snap bean for processing (area and production)

| | 2002 | | 2003* | |
|--------------|--------------|-------------------|--------------|-------------------|
| | Area (acres) | Production (tons) | Area (acres) | Production (tons) |
| Delaware | | | 2800 | 7000 |
| Illinois | 20,600 | 62,300 | | |
| Indiana | 6,000 | 17,860 | 6,800 | 21,420 |
| Maryland | | | 1600 | 4000 |
| Michigan | 16,000 | 60,030 | 13,500 | 45,900 |
| New York | 21,300 | 63,590 | 24,300 | 95,990 |
| Oregon | 18,700 | 116,250 | 16,700 | 105,210 |
| Pennsylvania | 7,500 | 20,340 | 8,400 | 24,360 |
| Wisconsin | 72,200 | 317,070 | 66,200 | 291,280 |
| Other states | 47,800 | 173,820 | 47,500 | 160,670 |
| U.S. Total | 210,100 | 831,260 | 187,800 | 755,830 |

* Only contract production

Source: USDA, National Agriculture Statistical Services

Fresh-market snap bean production is dominated by the southern states. Florida is the leading producing state, growing about half of the fresh crop. The state supplies fresh-market snap beans between the months of October and June. There is also some snap bean import from Mexico that comes through Florida to supplement supply from November to April. Georgia, California, New York and North Carolina are also leading states in fresh-market snap bean production.

The market for fresh snap beans

Consumption of fresh snap beans has been on the rise over the past few decades. An estimated 2% of the U.S. population consumes fresh snap beans on any given day. During 1998-2000, total consumption in the U.S. averaged 500 million pounds. According to mintel (*salad and salad accompaniments*, 2002), annual per capita consumption of snap beans has increased from 7.5 pounds in 1998 to 7.8 pounds in 2000. A number of factors and trends have affected the market for snap beans.

(1) Due to health concerns, consumers are increasingly adding fruits and vegetables in their diets. In particular, low carb dieters are becoming key consumers of vegetables that include snap beans. A consumer survey conducted by mintel (mintel, *low carb*, 2004) indicated that those consumers who are on a low carb diet or who are carb aware consume more of low carb diet vegetables including spinach, peppers, lettuce, radishes and snap beans. Snap beans are known as a moderate source of fiber, vitamins and minerals. They are low in calories, sodium and fat.

(2) Demographics is the other factor that affects the snap bean market. Although snap beans are generally inexpensive, consumers with high income appear to have the highest per capita consumption. In terms of age distribution, fresh snap bean consumption is highest among older Americans. Increased diversity in the U.S. population has also led to an increase in demand for snap beans. Asian Americans consume the greatest amount of fresh snap beans per capita. On the other hand, it appears that Hispanics have low preference for fresh-market snap beans.

(3) Recent growth in ethnic-based restaurants (e.g., Mediterranean and Asian cuisines), natural and healthy food restaurants, and related specialty food service outlets has also contributed to an increase in the consumption of fresh snap beans.

There is a regional variation in the consumption of fresh snap beans. The South and North East regions are the highest consumers in the nation. There is relatively low snap bean consumption in the West. This may be attributed to a large Hispanic community in these regions that has low preferences for fresh snap beans. Overall, key markets for the fresh-market snap bean products in these regions are large cities that account for nearly more than one-third of the fresh snap bean consumption.

Unit prices are generally higher for fresh-market snap beans than for processed snap beans. In 2005, the fresh-market snap bean price was \$52.60/cwt, while the price for frozen and canned snap beans stood at \$198/ton, and \$117/ton, respectively. These unit prices show slight increases from the previous years. Due to a limited domestic supply, prices for fresh snap beans are generally higher in the months between January and April. High fresh snap bean supply brings prices to their lowest level in the months of June and July. Price variation between seasons, however, seems to be generally low. This may be due to the availability of a relatively reliable supply of fresh snap beans (partly because of the short growing season that enables frequent harvesting) throughout the year. Fresh snap beans are priced on daily spot markets, while most of the processed snap beans are sold under contract between growers and processors.

Most of the fresh snap beans are currently purchased at super markets and consumed at home. There is also an increasing number of ready-to-eat new products that use snap beans as ingredients or add-ins and available in supermarkets as frozen or shelf-stable prepared meals (e.g., recently introduced new products include citrus glazed chicken with snap beans, roasted turkey with vegetables that include snap beans, or microweavable prepared meal with a combination of crab, clam, squids, and snap beans on a bed of seasoned rice). These products need very little preparation at home and some of them are coming as natural or healthy foods.

In the away-from-home market, the food service sector, in particular, family and high-end restaurants are the major outlets for both fresh and processed snap beans. There are also some ethnic-based restaurants that regularly use fresh snap beans (as main- or side-dishes) in their menus. Despite this trend, however, the food service outlet generally plays a limited role in the fresh snap bean market. As is the case with some other vegetables (e.g., sweet corn and broccoli), until now snap bean producers and processors have little success in expanding their market share through the fast-food restaurant channel. The use of fresh snap beans in these restaurants is still very low. Just less than 3 % of fresh snap beans and less than 1% of canned and frozen snap beans are sold through this channel. Fresh snap beans in restaurants are also faced with a competition from canned and frozen snap beans. Since the processed snap beans are less labor-intensive compared to the fresh snap beans, they are preferred products by restaurants and other institutional markets (e.g., schools).

In the international market, the U.S. is the leading importer and exporter of fresh snap beans. The snap bean export season generally runs from October through July. Imports of fresh snap beans are strongest in the months when there is lower domestic supply. A large part of the imports comes from Mexico, while most of the export goes to Canada.

Concluding remarks

Most of the snap beans are currently grown in open fields. There is little information on the use of greenhouses or hydroponics for commercial snap bean production. Although there are some seasonal price differences, fresh snap beans in the U.S. appear to be available throughout the year. Due to this year round supply and the impact from imports, value will play a limited role in raising sales from fresh snap beans. There is a limited potential to raise sales from off-season snap bean production.

There are, however, different market segments that could be expanded. For instance, as the number of older Americans increases, interest in healthy diet will increase. As a result, this group will create a key market segment for low carb food products that include snap beans. In this regard, product innovation is one key area that needs special focus in order to expand the market for snap beans. Adding or blending snap beans with other healthy food products directed at this consumer group will increase the market potential for snap bean growers and processors. Snap beans can be served as a main dish, a side vegetable, in casseroles and soups, in salads with other vegetables, or in blends and mixes with other foods. Quality of the product is also important in marketing snap beans.

When buying fresh snap beans, the consumer looks for product attributes such as firmness, color, and crispiness or whether it snaps when broken. Some special or heirloom varieties could also fetch higher prices in high end restaurants and other food service outlets. In addition, product innovations that could make the snap bean product more attractive to the Hispanic community will create a large market potential for growers and processors.

Convenience is the other market driver that will determine the future market growth for fresh snap beans. Consumers are increasingly willing to buy pre-prepared, pre-washed or pre-packaged vegetables and salads so that they do not need to take much time for preparing food at home. Fresh-market snap bean growers that can come up with new packaging innovations that enable to keep the product fresh for some days and make it easier for the consumer to buy, transport and prepare food with the shortest possible time will have a better success in the fresh snap bean market.

In terms of marketing channels, fresh snap bean producers can use different market outlets to sell their products. Small producers can use farm and road side stands, pick-your-own operations or small specialty food retail shops to sell their products. Medium-size and large producers can sell their products through wholesale markets and processors, food service outlets, or supermarkets. Growers and processors who can work with institutional food service providers such as schools and hospitals can increase their sales.

Overall, growth in consumers' interest in healthy lifestyles and foods, the expansion of ethnic-based restaurants, and product development and packaging innovations will support future growth in the fresh snap bean market. However, with the shift towards the consumption of fresh snap beans, market growth for processed snap beans will be limited.

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