

# **Frozen Edamame: Global Market Conditions**

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## **INTRODUCTION**

Edamame is a popular vegetable that is boiled, drained, salted and served in many Japanese restaurants. In the past, edamame was available only as a fresh vegetable during the harvest season in Japan. However, by late 1960's and with the improvements in technology, Japanese manufacturers began to produce frozen edamame. By 1974, these same manufacturers also started to expand their production operations overseas.

This paper will focus on the frozen edamame market, specifically global supply and demand conditions and Asia Food's contribution to this market.

## **MARKET OVERVIEW: GLOBAL SUPPLY**

### **Taiwan**

From just a few hundred tons of frozen edamame in 1974, Taiwan's production reached a high of 45,000 t per year between 1985 and 1991. By this time, Taiwan had a total of 27 frozen edamame processors and captured 90% of the Japanese frozen edamame export market.

But with the rising labor and raw material costs in the late 1980's, Taiwanese processors, like Japanese, were forced to expand production operations overseas. As a result, there are only 11 frozen edamame processors remaining in Taiwan at present. These manufacturers export approximately 30,000 t of frozen edamame per year, of which approximately 24,500 t are exported to Japan, 5,000 t to the USA and the remaining balance to other countries such as Canada, Europe and Australia.

During this period, small quantities of fresh edamame have also been shipped to Japan. However these shipments have steadily declined since edamame usually could not retain its freshness by the time it reaches its customers.

Though China is currently considered the largest frozen edamame processor, Taiwan will always be regarded as a key supplier. Most of the customers prefer Taiwanese frozen edamame because of its higher brix, better flavor and better quality than others.

### **China**

China opened its door to foreign investments in the 1980's. Taiwanese processors relocated their operations to southern China due to common language and culture, favorable soil, climate and close proximity to Taiwan. The Taiwanese frozen edamame processors brought seeds, farming experts, sophisticated machinery and production know-how to China. It took over 7 years to stabilize the edamame yield. The quality of the raw materials has also significantly improved over the years.

Today, China has 10 major Taiwanese companies that operate 16 factories and 30 Mainland Chinese owned factories. Together they export about 40,000 t of frozen edamame to Japan and another 4,500 t to countries including the United States, Europe and Australia.

Due to its relatively cheap labor, China is expected to remain the largest frozen edamame supplier. However, the rising living costs along the coastal areas of China have prompted investors to shift their investments towards the inland rural areas of China.

### **Thailand**

In Thailand, production of frozen edamame began in the 1990's. There are currently 3 major processors. They process a total of 9,000 t a year, of which 8,700 t are exported to Japan and 300 t to the USA and other countries. The quality and the price of Thai frozen edamame are in between those of Taiwan and China. Frozen edamame is expected to grow moderately in Thailand.

### **Indonesia**

Edamame has been cultivated in Indonesia since 1990, though it only produced a few hundred tons per year. By year 2000, about 2000 t were produced and exported to Japan.

### **Vietnam**

Vietnam had a late start due to its closed-door foreign investment policy. In 1995, it produced 100 t of frozen edamame. Today, about 250 t are produced. The quality of Vietnam's raw material is still in early development stage.

### **Other Supply**

Frozen edamame is also produced in smaller quantities in Japan, Australia, and the USA.

## **MARKET OVERVIEW: GLOBAL DEMAND**

### **Japan**

Japan is the world's largest frozen edamame consumer. Frozen edamame import has increased from 36,200 t in 1986 to 75,000 t in 2000. The Japanese frozen edamame market is expected to grow further by about 7% per year to 100,000 t by 2005. This strong growth is attributable to several reasons.

First, continuous improvements in frozen technology have significantly decreased the peculiar/funny taste associated with frozen products. As a result, more restaurants, supermarkets and convenience stores are increasingly replacing fresh edamame with frozen edamame.

Second, consumers are interested in convenient foods due to the fast-paced lifestyles. In response to this trend, Japanese importers and Taiwanese processors produced frozen salted edamame in the 1990's. Such timely product innovation pushed the demand for frozen edamame as demonstrated by the 50,000 t of frozen salted edamame exported to Japan last year.

Third, the aging farming population and decreasing number of young individuals choosing farming as their careers in Japan have led to gradual decrease in fresh edamame production in Japan every year. Today only 80,000 t of fresh edamame is consumed against 135,000 t in the 1990s. The demand for frozen edamame has replaced the demand for fresh edamame.

Finally, the wide variety of edamame available is expected to spur demand. Over 20 years of

research, produced new improved edamame varieties. Recently, *Chamame* or brown edamame and *Kuromame* or black edamame have gained popularity among the Japanese consumers due to their distinctive taste. Interestingly, the darker the color the more flavorful and sweeter they become. Since their debut 3 years ago, sales of *Chamame* and *Kuromame* have climbed to 6,000 t a year.

### **The United States**

Export of frozen edamame from Taiwan to the USA started with only 300-500 t per year in the early 1980's, all of which were destined for oriental/specialty supermarkets and restaurants.

With the "Zen fever, "vegetarian fever" and "healthy-food" trends, "soy" products became an instant hit by 1997. Many major and minor influential magazines, articles, news, and other media were also introducing soy products, including edamame, to the public. The FDA's announcement that soybean could lower the risk of heart disease further spurred the demand for frozen edamame. Frozen edamame will soon be available in hundreds of supermarkets such as Trader Joes, Costco, Albertson's, Ralph's and Whole Foods.

Last year, the US imported approximately 10,000 t of frozen edamame. Of this total, 5,000 t were imported from Taiwan, 4,000 t from China and the remaining 1,000 t from Thailand and Indonesia and local sources such as Minneapolis. Continuous scientific findings on the health benefits of edamame are expected to accelerate this growth and eventually make edamame one of the common daily vegetables in American food culture. While the frozen edamame market in the US is at its infant stage, it is expected to significantly expand from its current 10,000 t per year to 25,000 t by 2005. Currently about 500 t of frozen edamame is consumed in all other Asian countries. Edamame is expected to move to Canada as well as European countries, however, the demand may not be as dramatic as in Japan and USA.

Educating the consumers with preparation, cooking and eating methods are very important. Directions for use are printed on the back of the frozen edamame package. Edamame with short blanching time requires additional cooking in microwave or boiling whereas the one with long blanching time can be defrosted and consumed directly.

## **ASIA FOODS**

Asia Foods, started in 1976, is one of the largest suppliers and manufacturers of frozen vegetables in the Pacific Rim. It has a total of 9 core factories and 2 associated factories located in Taiwan, China, Thailand and Vietnam. The company produces 65 different frozen food items with a sales quantity of over 32,000 t per year.

In 2000, Asia Foods' total sales of frozen edamame reached 13,200 t, and they originated from China (7350 t), Taiwan (4850 t), Thailand (800 t) and Vietnam (200 t). The export to Japan and USA were 7700 t and 5000 t, respectively. Today, Asia Foods controls 10.26% and 50% of the Japanese and USA frozen edamame market respectively. Asia Foods has a capacity to produce 17,500 t of frozen edamame (10,000 t from China, 6,000 t from Taiwan 1,500 t from Thailand and 1,500 t from Vietnam). The plans are to increase the capacity to 25,000 t by 2005. If Japan and the USA demand increases to the expected 125,000 t by 2005 the share of Asia Foods would increase.

Asia Foods edamame are known for their excellent quality and the company was one of the first to implement and receive the certification of HACCP and ISO9002 in China. Asia Foods

policy is not to use any GMO raw materials. Asia Foods is the first to develop salted frozen edamame. Asia Foods have also gone into organic farming in China in 1994. The Asia Foods have received organic farming certification from 3 certifiers: (1) OFDC or Organic Food Development Center of China in 1997; (2) OCIA or Organic Crop Improvement Association of U.S.A in 1998; and (3) most recently, JONA or Japan Organic & Natural Foods Association early this year. Asia Foods currently produces 7,000 tons of frozen organic vegetables, including edamame, spinach, broccoli, green asparagus and green beans, of which 81 t were exported to the U.S. last year (95% of the above is frozen edamame).

The global supply and demand of frozen edamame in 2000 is shown in Fig.1.

