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# World Market for Asparagus

RAP Market Information Bulletin No. 2

### Production

Asparagus has traditionally been a Northern Hemisphere crop. However, it is now grown in the Southern Hemisphere as well, as many developing countries in the last decade have dramatically increased production to take advantage of the growing market for this high-value vegetable crop. It is estimated that over 140 thousand hectares (ha) worldwide are devoted to asparagus production, with 40 percent of this total in Europe, 31 percent in North America, 14 percent in Asia, and the remainder in South America and Africa.

### North America

The **United States**, whose production is centered around green varieties of asparagus, is currently the world's largest producer of asparagus. In 1993, 99,970 metric tons (MTs) were harvested on 34 thousand hectares. This represents a decline of almost 7,000 MTs from the previous year due to reduced acreage. Fifty-six percent (56,840 MTs) of total production was for the fresh market in 1993, continuing the steady decline of fresh supply since 1989. Most production is concentrated in California. U.S. exports have been increasing steadily, going from 14,201 MTs (\$10.7 million) in 1988 to 21,253 MTs (\$21.3 million) in 1993. Forty-six percent of 1993 exports were destined for Canada, followed by Japan (36%), the European Union (9%), and Switzerland (8%).

**Canadian** production, much smaller than that of the United States, is also centered around green spears. It has also witnessed a decline in production during the past five years, with 1992 production at 3,185 MTs, about half of which was for fresh consumption.

**Mexico** produced 30,500 MTs of asparagus in 1993, with 1994 estimates at 32,000 MTs. Most production is in green varieties. Mexico exports fresh asparagus primarily to the United States during the winter, but also ships product to Canada, Europe, and Asia. The Mexican season begins in August and continues until March, peaking in January and February.

### Central and South America

Several Central American nations have begun asparagus production during the last decade. **Guatemala** is the leading producer, with 800 ha in production. **Costa Rica** is the second-largest producer in Central America, with 160 ha in production.

**Peru** is officially the second-largest asparagus producer in the world, but when final production statistics for 1994 are released, it may well have overtaken the United States. Peru produced over 97,322 MTs on 16,370 ha in 1993, and is forecast to produce 103,000 MTs in 1994. An estimated 95 percent of total production goes to export (both processed and fresh), making Peru the largest asparagus exporter in the world. Peru produces green and white asparagus. Most of the green varieties are sold on the U.S. market. Europe imports fresh green asparagus from Peru as well, but most European imports are of white asparagus (fresh, frozen, or canned). The Peruvian season begins in September and ends in March.

**Chilean** production is estimated at 17,000 MTs for the 1993/94 season, more than 95 percent of which is of green spears. Fifty-five percent of Chile's production is exported in fresh or frozen form. Most Chilean exports are destined for the United States, followed by Europe and Asia. Chile exports frozen and canned, as well as fresh, asparagus. Planting area has decreased in Chile about 40 percent in the last three years, due to competition from Peru.

**Argentina** had about 1,500 ha under asparagus production in 1991, and plantings have reportedly increased since that time. Argentina's production has shifted from white to green asparagus for the fresh market. The harvest lasts from mid-August through December.

## Europe

**Spain** produced 86,000 MTs of asparagus in 1993, of which 23,000 MTs were exported in fresh form. Spain produces white and green asparagus; two-thirds of the white product is processed, while most of the green is sold fresh. Spain replaced France as the largest supplier of fresh asparagus to other European Union (EU) countries five years ago, and has held this position ever since. The Spanish season lasts from March until June, with 80 percent of total production harvested in April and May.

**Greece** is the second-largest supplier of fresh asparagus to the EU market. Production is about 10,000 MTs on 2,900 ha, and is mostly in white varieties. The Greek season runs concurrently with the Spanish season, from March-June.

The **Netherlands** was the third-largest supplier of fresh asparagus to other EU countries in 1992, supplying them with 8,158 MTs of product. Ninety-seven percent of production is in white varieties, but green asparagus production has been on the rise. The Netherlands is experimenting with glasshouse production during the winter months.

**France** produces about 50,000 MTs of asparagus annually, 90 percent of which is white. Overall planting area has decreased in recent years, although plantings in southern France have been increasing. France exported 6,704 MTs of asparagus to other EU countries in 1992.

## Africa

**South Africa** is the largest producer of asparagus in Africa, with about 3,000 ha of mostly white spears. South Africa exports fresh asparagus to Europe from September until January and to the Middle East during the period October-March. **Morocco** sends almost as much fresh asparagus to Europe as South Africa (566 MTs), while **Egypt, Zimbabwe, Zambia, and Tunisia** export less than 100 MTs each to the European Union.

## Asia

**China** is the largest producer of asparagus in Asia, although production estimates are unavailable. **Taiwan** produced 7,951 MTs of fresh asparagus on 1,525 ha in 1993, but production has been declining rapidly over the last ten years (production in 1989 and 1985 was 25,092 MTs and 62,068 MTs, respectively). Historically, sixty percent of Taiwanese production was of white asparagus, and most was processed for the export market.

**Thailand** grows both green and white asparagus, and supplies the Japanese and European market with the whole gamut of asparagus products: green and white, fresh and processed, whole and tips. **Indonesia** produces about 2,100 MTs of asparagus per year, 60 percent of which is white.

**Japan** has 10,000 ha of asparagus planted, 85 percent of which is green and the remainder, white. The **Philippines** grows mostly green asparagus on 1,000 ha, with most production exported to Japan in fresh form.

**Australia** and **New Zealand** each have about 3,000 ha of green asparagus in production, with most exports destined for Japan. Their seasons run from September through January.

## MARKETS

## North America

U.S. imports have risen from 23,785 MTs (US\$38.6 million) to 31,439 MTs (US\$49.7 million) over the period 1991-1993, with imports for the first nine months of 1994 totaling 23,723 MTs (US\$42.6 million). In 1993, Mexico supplied 73 percent of the total import market, followed by Peru (18%) and Chile (5%). Other suppliers which shipped more than 100 MTs in 1993 include Guatemala, Argentina, and Ecuador. Fifty-five percent of all imports entered during the period January-March in 1993, with nearly a quarter of annual imports entering in February. Most of the remainder of imports enter during the last six months of the year. Mexico was the only country to supply the U.S. market in every month in 1993, with 72% entering during January-March. Eighty-four percent of Peruvian exports to the U.S. enter during September-December, while 87% of Chilean supply enters in October and November.

New York wholesale prices for 11-lb boxes of foreign supplied green asparagus ranged from \$10.50 to \$33.00. During the peak import period (August-February), prices ranged from \$15.00 to \$33.00, mostly \$20.00-\$25.00 per 11-lb box. Pyramid cartons from Mexico sold for between \$29.00 and \$37.50 each in February and March.

## Europe

Most European countries source their asparagus import requirements from Greece and Spain, and the large growth in the asparagus import market between 1988 and 1992 (from ECU 117 million to ECU 180 million) has been due mostly to increased supplies by these two countries. The main Spanish and Greek seasons run concurrently, from March-June, and it is during this time period (especially during April and May) that EU fresh asparagus imports are at their highest levels. Europeans generally prefer asparagus with large stalks, and (with the exception of the United Kingdom) have traditionally consumed white, rather than green, asparagus. However, green asparagus in the last five years has been making inroads into the mainland European market, to the point where most off-season fresh asparagus imports are of green, rather than white, varieties.

Between 1988 and 1993, imports from non-EU suppliers has increased from 4,828 MTs (ECU 14 million) to 5,931 MTs (ECU 17.9 million), although imports from these sources continue to represent only a fraction of total EU trade in fresh asparagus. The growth in imports from non-EU suppliers was fueled by increased exports to Europe by Peru, Morocco, and Poland. Thailand has also found a niche in the EU, increasing its asparagus export earnings to this market from ECU 91 thousand to ECU 920 thousand over the past six years. Other off-season suppliers include South Africa, Mexico, Guatemala, Ecuador, and Zimbabwe.

**Germany** is a large producer, consumer, and importer of asparagus. The U.S. Department of Agriculture (USDA) estimates that less than half of all German consumption of asparagus is met by domestic production. Most Germans still prefer white asparagus to green, but green asparagus is being actively marketed in Germany by the U.S. and other suppliers. Germany imported 38,027 MTs of fresh asparagus in 1992 (ECU 136 million), a substantial increase over 1988, when 26,328 MTs (ECU 90 million) were imported. Imports from non-EU suppliers increased 660 MTs from 1988 to 1993, although 1993 imports of 2,025 MTs were less than the 2,420 MTs imported the previous year. In 1993, Germany received about half (927 MTs) of its non-EU imports from Poland, with an additional 426 MTs supplied by South Africa, and 242 MTs arriving from the United States. German importers sold Chilean green asparagus for between DM9.60/kg and DM10.80/kg between September and December, 1994. Prices for white asparagus from South Africa began the season at DM12.50/kg in September 1994, and ranged between DM6.50/kg and DM10.50/kg during the period October-December.

**France** is the second-largest EU importer of fresh asparagus, bringing in 6,436 MTs (ECU 17 million) of product in 1992. EU suppliers accounted for 92 percent of total French imports in 1992. Non-EU suppliers increased exports to France from 209 MTs to 540 MTs over the period 1988-1993. Morocco and Chile, at 173 MTs and 83 MTs, respectively, were the largest non-EU suppliers to the French market in 1993. Other supplying nations whose asparagus exports to France have been steadily increasing include the United States and Peru. French consumers prefer white asparagus, but green varieties are becoming more popular. Green Chilean and Peruvian product began the 1994 season in October at FF40/kg., and were selling for FF29/kg in December. White product from Peru sold for FF29/kg in November, 1994.

The **Netherlands'** imports of fresh asparagus tripled between 1988 and 1992, from 430 MTs (ECU 1 million) to 1,310 MTs (ECU 3.3 million), with 25 percent of Dutch imports entering from non-EU members. Imports from non-EU nations have grown from 198 MTs (ECU 552 thousand) in 1988 to 551 MTs (ECU 2 million) in 1993. Peru is the largest non-EU supplier to Holland, followed by South Africa. Thailand, Mexico, Guatemala, and Argentina also export fresh asparagus to the Netherlands. Green asparagus from Peru generally sold for between FL10.00/kg and FL12.00/kg between September and December, 1994. Green asparagus from Chile and Argentina was in the same price range. Asparagus tips from Peru and Thailand were also imported, and sold for between FL18.50/kg and FL25.00/kg.

The **United Kingdom** is the only major EU nation that imports more asparagus from outside Europe than from other EU countries (72 percent of 1992 imports were supplied from non-EU suppliers), mostly due to a preference by English consumers for green asparagus. Even so, imports of non-EU product have fallen from 1,592 MTs (ECU 4.8 million) in 1988 to 1,195 MTs (ECU 4.3 million) in 1993. Imports from Peru have grown over this time period (from 51 MTs to 377 MTs), as those from the United States have fallen (from 1,006 MTs to 516 MTs). Other suppliers to the British market include Thailand, Mexico, South Africa, and Egypt. Generally speaking, British importers sold Peruvian and Mexican product for between £3.00/kg and £4.50/kg in late 1994.

### **Middle East**

The Middle East is not a large market for asparagus. Dubai, one of the largest import centers for produce in the region, reported receiving only 43 MTs in 1993, and that was due to unusually heavy imports from Iran. Total value of Dubai imports in 1993 were only about US\$112 thousand. Between January and September, 1994, Dubai sourced most of its fresh asparagus from Thailand (18 MTs) and the U.S. (3 MTs). Other suppliers included France, Spain, Holland, Australia, Kenya, Guatemala and Peru. According to European export statistics, the EC nations as a whole exported only 3 MTs of fresh product to Saudi Arabia, and 1 MT to the U.A.E. U.S. export statistics indicate 4 MTs of fresh U.S. asparagus shipped to Kuwait in 1993.

1994 importer selling prices in the Middle East varied a great deal, from a low of Dh14 (US\$3.78)/kg in Dubai for Australian product in November to a high of R108.00 (US\$30.00)/kg in Qatar for Dutch product in July. Generally, the lowest prices were paid for summer product from Europe and the United States, as well as winter product from Australia. These ranged between US\$10.00/kg and US\$8.00/kg. Higher prices were paid for winter imports from Peru, the United States, and Europe. These prices ranged between US\$9.00/kg and US\$12.00/kg.

### **Asia**

**Japan** is by far the largest import market for fresh asparagus in Asia, and is one of the largest importers of this product in the world. Japanese consumers prefer green spears. Japan's imports of fresh asparagus have increased from 12,841 MTs (US\$66 million) in 1991 to 18,315 MTs (US\$89 million) in 1993. The largest supplier to the Japanese market is the U.S., followed by Australia, the Philippines, Mexico, Thailand, and New Zealand. All these countries sent at least 1 thousand MTs of product to Japan in 1993. Japan imports asparagus year-round, and imports are highest during September-April. Japanese production is concentrated during the summer months. Average monthly Tokyo wholesale prices in 1993 ranged from ¥808/kg to ¥1219/kg, with the highest prices recorded during the period July-September and December-January. Annual throughput through the Tokyo wholesale market system was 6,790 MTs in 1993, up from 6,415 MTs in 1992. Monthly wholesale throughput in Tokyo peaked in May and June, when domestic production is highest.

Taiwan and South Korea are small import markets for asparagus, although with anticipated lowering of tariff and non-tariff barriers in both these countries within the near term, these markets may offer increased opportunities. **Taiwan** imported 16 MTs of fresh asparagus from New Zealand in 1993, worth only US\$25 thousand CIF. Average monthly wholesale prices in Taipei ranged from NT\$49/kg to NT\$144/kg, with highest prices generally recorded during the period December-March and in July. Taipei wholesale transactions are highest during the periods April-June and August-September. Wholesale transactions during the period December-March are only a fraction of what they are during the in-season. **South Korea** imported 35 MTs (US\$178 thousand) of product in 1993, mostly from the United States.

### **GRADES AND STANDARDS**



The UN/ECE Standard (FFV-04) for fresh asparagus applies to shoots of the cultivars grown from *Asparagus Officinalis* L., to be supplied fresh to the consumer. The standard was developed by the Working Party on Standardization of Perishable Produce and Quality Development of the United Nations Economic Commission for Europe. It does not apply to asparagus of less than 10 mm in diameter, known as "sprue". Asparagus shoots are classified into three groups according to color:

- white asparagus
- violet asparagus, having tips and a part of the shoot of a color between pink and purple
- green asparagus, having tips and all or part of the shoot of a green color

Minimum requirements, classification, sizing and tolerance information is given below. Additional information on presentation and marking standards can be obtained from either the RAP Project or from the UN/ECE, Geneva.

### **Minimum Requirements**

In all classes, subject to the special provisions of each class and the tolerances allowed, the shoots must be: intact; sound, with produce affected by rotting or deterioration such as to make it unfit for consumption is excluded; clean, practically free of any visible foreign matter; fresh and appearance and fresh smelling; free from damage by rodents or insects; practically unbruised; free of abnormal external moisture, i.e. adequately "dried" if they have been washed (shoots may be dried but not soaked); and free of any foreign smell and/or taste.

The cut at the base of the shoots must be as clean and as square as possible. The asparagus must not after cutting have undergone any treatment other than re-cooling to preserve or restore its fresh appearance. In addition, shoots must be neither hollow, split, peeled nor broken. Small cracks which have appeared after harvesting are, however, allowed, so long as they do not exceed the limits outlined under "Tolerances" below.

The condition of the asparagus must be such as to enable them: (a) to withstand transport and handling; and (b) to arrive in satisfactory condition at the place of destination.

### **Classification**

"**Extra**" class shoots must be of superior quality, very well formed and practically straight. Having regard to the normal characteristics of the group to which they belong, their tips must be very compact. Only a few very slight traces of rust, removable by normal peeling by the consumer, are allowable. For white asparagus, the tips and shoots must be white with only a faint pink tint appearing after cutting allowed. For white and violet asparagus, no traces of woodiness are allowed, although a slight trace of woodiness is allowed for green asparagus. To improve presentation when the asparagus is packed in bundles, those on the outside may be slightly beveled, so long as the height of beveling does not exceed 1 cm.

"**Class I**" shoots must be of good quality and well formed. They may be slightly curved. Having regard to the normal characteristics of the group to which they belong, their tips must be compact. Slight traces of rust, removable by normal peeling by the consumer, are allowable. For white asparagus, the tips may be slightly colored before cutting and a faint pink tint appearing on the shoot after cutting is allowed provided these colorations disappear after cooking. For white asparagus, no woody shoots are allowed, although a trace of woodiness is permissible for violet and green asparagus.

"**Class II**" shoots include those that do not qualify for the higher classes but satisfy the minimum requirements. Compared with Class I, shoots may be less well formed, more curved and have less compact tips. Traces of rust, removable by normal peeling by the consumer are allowed. Shoots may be slightly woody. The tips of white asparagus may have a coloration other than a green tint.

### **Sizing**

Sizing is determined by the length and diameter of the shoot. The length of the shoots must be between: 17 and 22 cm for long asparagus; 12 and 17 cm for short asparagus; 12 and 22 cm for

Class II asparagus in bulk in packages; and under 12 cm for asparagus tips. However, green asparagus shoots may have a maximum length of 27 cm provided that at least one-third of their length is green.

The diameter of shoots should be measured at the mid-point of their length. The minimum diameter and the sizing are outlined below:

Quality Class	Minimum Diameter		Size	
	mm	mm	mm	mm
Extra	12	12	12 to 16	16 mm and over with a maximum variation of 8 mm in
I	10	10	10 to 16	16 mm and over with a maximum variation of 10 mm in
II	10		no provisions as to uniformity prescribed	

### Tolerances

**Quality Tolerances.** For "Extra class," 5 percent by number or weight of shoots not satisfying the requirements of the class, but meeting those of Class I, or exceptionally, coming within the tolerances of that class, or having slight unscarred cracks appearing after harvesting. For "Class I," 10 percent by number or weight of shoots not satisfying the requirements of the class, but meeting those of Class II, or exceptionally, coming within the tolerances of that class, or having slight unscarred cracks appearing after harvesting. For "Class II," 10 percent by number or weight of shoots satisfying neither the requirements of the class, nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption. Moreover, shoots showing very slight fissures due to washing up to a maximum limit of 10 percent by number or weight are allowed.

**Sizing Tolerances.** For all classes, 10 percent by number or weight of shoots not corresponding to the size indicated and deviating from the specified limits subject to a maximum deviation of 1 cm in length and 2 mm in diameter.

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This publication was produced by Fintrac Inc. under subcontract with Development Alternatives Inc. for the USAID-funded Asia Regional Agribusiness (RAP) Project.

*This site was designed by [Fintrac Inc.](#), under the auspices of the Asia Regional Agribusiness Project and through the sponsorship of the [U.S. Agency for International Development](#) and the [U.S. Department of Agriculture](#).*