

Introduction

The information provided on each product covers three aspects of market requirements.

First, basic requirements related to type of produce, production and harvesting are outlined including recommended varieties, appearance and internal characteristics. Information is also presented on post-harvest processes as used to prepare produce for markets.

Quality standards are then set out. These are minimum requirements under UN/ECE, OECD or EC regulations, wherever issued, or standards as required by the major buyers. Exporters are advised, however, always to check standards with the importer in case he has more stringent requirements. A section on packaging describes the type of boxes or cartons currently in use and, where common, forms of pre-packing.

Finally there are sections containing commercial information on major sources of supply and seasonal supply patterns, prices, transport and import tariffs. Prices quoted are notional wholesale prices, that is the list prices quoted by central buying organisations to retailing organisations within integrated groups. There are no wholesale markets as such in Nordic countries. National currency prices have been converted into US\$ at the following rates:

Swedish Crown	5.80
Danish Krone	6.20
Norwegian Krone	6.30
Finnish Makka	4.35

The data on import tariffs exclude the sampling and phyto-sanitary fees which are charged on most imported produce (see Appendix 1). Each product description ends with a brief summary of the present market for the product.

Abbreviations and symbols used are:

Relative humidity:	RH
Size grades:	* (acceptable) ** (strongest demand)
Supply pattern chart:	 peak supply  limited supply

Avocados



Varieties: The Hass variety is the most popular in all Nordic countries, particularly Sweden. Green varieties like Fuerte are purchased as alternatives when Hass is unavailable.

Description: The fruit should be pear shaped, coloured either green or dark purple/black characteristic of Hass, and without a stalk. The skin should be thin, usually wrinkled but without marks. Flesh should be firm, yellowish or light green. It contains a large stone.

Field harvest

Correct timing of harvest, based on local experience, is essential to ensure that firm, fully matured fruit are picked. Indicators of maturity are skin gloss changing to matt, stalk drying and yellowing and fruit well filled. Quantitative methods of harvest timing, based on % oil and dry matter content, are available but they are complex to use as they differ with location and variety of fruit.

Post-harvest

Unwashed fruit should be cooled within 24 hours of harvest. Storage conditions: sub-tropical varieties 7-10°C, tropical 10-13°C, both at relative humidity (RH) 60%; storage life 2-4 weeks; shelf life at 20°C is 2-7 days. Avocados are susceptible to chilling injuries, which cause brown flesh discolouration and uneven ripening. Fruit is both an ethylene producer and ethylene sensitive. More information: ISO International Standard No 2295, Avocados - Guide for Storage and Transport.

Grading

Quality standards for export are set by regulations UN/ECE No FFV-42. These specify that fruit should meet the following minimum requirements:

- sound, whole and intact;
- clean, free of foreign matter and excess moisture;
- maximum stalk length of 10mm;
- free of foreign smell or taste;
- ripe fruit free of bitterness;
- free from chilling injury;
- sufficiently mature to ripen completely;
- be uniformly packaged in terms of origin, variety, quality and size.

There are three classes:

'Extra' class: Fruit of superior quality and typical in shape and colour for the variety. The skin must be free of defects except for slight, superficial marks. If present, the stalk must be intact. No more than 5% of fruit should fall below 'Extra' class standards.

Class 1: Good quality fruit with typical shape and colour for the variety. Slight defects in shape, colour, skin marks not exceeding 4 cm square and slight stalk damage are allowed - provided they do not affect overall appearance and storage life. Fruit flesh must be free of defects. No more than 10% of the fruit should fall below Class 1 standard and none below Class 2.

Class 2: Fruit must have flesh free from defects, retain their essential characteristics and satisfy the minimum requirements.

The following sizes/weights of fruit are recognised with the code numbers indicated:

Size Code	Grams
4	781 - 1,220
6	576 - 780
8	461 - 575
10	366 - 460
12 *	306 - 365
14 *	266 - 305
16 **	236 - 265
18	211 - 235
20 *	191 - 210
22 **	171 - 190

Avocados

Until recently, 16 has been the preferred size for taste and quality. However, pressures on prices have encouraged smaller fruit in the count range 20-22.

Packaging

Common box sizes: Single layer, fibreboard; dimensions 40 cm x 30 cm x 10/12 cm, 4.0 kg net weight; Double layer, fibreboard, open topped, reinforced corners, dimensions 40 cm x 33 cm x 20 cm, 12 kg net weight.

Supply

Recent imports statistics are shown below (in tons):

Country	1989	1990	1991
Sweden	3,318	3,267	N/A
Denmark	N/A	1,343	1,734
Norway	N/A	385	481
Finland	583	679	680

Israel and Mexico are the main suppliers during the winter months. Swaziland continues its position as the leading summer months supplier. Excellent quality fruit from Spain, benefitting from five-day road transit times, is increasing its share of the market. US supplies only fill end of season gaps.

	J	F	M	A	M	J	J	A	S	O	N	D
Israel												
Mexico												
Swaziland												
Zimbabwe												
Spain												
USA												

Price

Avocados attract low to medium prices as a generic product. Prices are relatively stable year-round at \$1.60 per kg for sea freight and \$2.00 - \$2.30 per kg for air freight.

Avocados

Transport

Most produce is sea freighted, in containers, to Hamburg, Rotterdam or Marseilles (from Israel). Limited air freight supplies are used to fill shortfalls between major shipment programmes.

Import tariffs

Rates in percentage ad valorem. Tariff number 0804 4000.

Country	Full	ACP	GSP	LDDC
Sweden	0%	0%	0.0%	0%
Denmark				
1 December - 31 May	4%	0%	3.5%	0%
1 June - 30 November	8%	0%	6.0%	0%
Norway	0.18kr/kg	0%	0.0%	0%
Finland	0%	0%	0.0%	0%

Marketing Summary

The market has matured with stable year-round trade competitively supplied mainly from multinationals and marketing boards. The resumption of imports from South Africa is likely to erode Swaziland's market share.

Carambola (Star Fruit)



Varieties: No branded varieties, although Malaysian types are most common.

Description: Fruit is green (unripe) to yellow, oval, with lengthwise ridges which give the fruit a star-shaped cross-section. The flesh is light yellow and translucent. Its taste is either sour or sourish, depending on variety and stage of ripeness.

Post-harvest

Carambolas are susceptible to chilling injury. Storage conditions, recommended 6°C, at RH 90%; storage life (sea freight) of 3 weeks; shelf life, 20°C at RH 60% is 4-5 days. The ridged edges of the fruit are susceptible to bruising which results in brown discolouration.

Grading

There are no national or international standards. Minimum commercial requirements are that fruit must be:

- fresh, intact, sound and clean;
- full bodied, free from spots or brown edges;
- free from pest or disease damage;
- fresh, sourish or sweet-sour in taste.

Usual fruit size is 10 cm in length.

Packaging

The standard package is a fibreboard box, fully telescopic lid, net weight 3.5 kg. Fruit are arranged symmetrically in a single layer, enclosed within 1 cm foam padding, normally packed in counts of 24 per box.

Carambola (Star Fruit)

Supply

No detailed import figures are available.

Malaysia is the main supplier with over 90% of the market. Secondary sources are Thailand, Brazil and Israel.

	J	F	M	A	M	J	J	A	S	O	N	D
Malaysia												
Thailand												
Brazil												
Israel												

Price

Prices are in the range \$3-\$5 per kg for air freighted fruit and \$1.80-\$2.40 per kg for sea freighted produce. The fruit retails at around \$1.20 per piece.

Transport

Over the last five years air freight has been replaced as the main means of transport by sea freight in reefer containers to Rotterdam. Sea freight shipments take 30 days from the Far East. The East Asiatic Company imports by sea direct into Aarhus, Denmark.

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0810 9090.

Country	Full	ACP	GSP	LDDC
Sweden	0%	0%	0%	0%
Denmark	2%	0%	0%	0%
Norway	0.27kr/kg	0%	0%	0%
Finland	0%	0%	0%	0%

Carambola (Star Fruit)

Market Summary

Carambola is a novelty fruit sold in very small quantities. Sales occur mainly during holiday periods, when it is mainly used in decorative cooking and for drinks. New sweet-tasting varieties may expand the market by establishing its dessert eating properties. Quality problems with sea freighted supplies, particularly browning of the ridges, may promote use of air freight, despite higher prices, to give better quality fruit.

Mangoes



Varieties: The most popular varieties are Haden, Tommy Atkins and Keitt, supplemented with Amelia (Mali), Ngowene (Kenya) and Sensation (Florida group).

Description: The shape of the fruit differs with variety and may be round, oval or pear shaped. Skin colour also varies from green to yellow-green ranging to red, orange and violet. Yellow-orange flesh must be ripe and tender, non-fibrous with an aromatic sweet taste. A large, flat seed is firmly embedded in the flesh.

Field harvest

Fruit should be harvested at the fully mature green stage. Indicators are well developed fruit shoulders, full 'cheeks', skin colour change from pale to dark green, and stalk colour change to brown/yellow as it dries. The precise timing varies with cultivar and location. Spray programmes against Anthracnose, from flowering up to pre-harvest interval (PHI) stage, are recommended. On cutting, a 1.5 cm stem should be left which is trimmed back to 2-3 mm at packing.

Post-harvest

Preliminary steps should include stem trimming and further treatment against Anthracnose with hot water (see ISO Standard 6660 - Mangoes, Guide to Storage). Cool rapidly within 24 hours. Storage conditions, 12-14°C at RH 90% for a storage life of 2-3 weeks; shelf life, 20°C at RH 60% for 3-4 days; controlled ripening by the importers at 20°C is preferable. Mangoes damaged by chilling have fibrous flesh and smell of turpentine.

Mangoes

Grading

Export quality standards are provisional (see UN/ECE AGRI/WP. 1/R.142 Rev. 3). The EC minimum requirements are that fruit must be:

- sound, whole, intact and firm;
- clean, free of foreign matter, smell or taste;
- free of damage caused by insects or low temperatures;
- free of marked bruising or excess external moisture;
- sufficiently mature for the ripening process to be completed;
- uniformly packed in terms of origin, variety, quality and size.

Mangoes should be graded to size and coded as follows:

Size code	Grams
A	200 - 350
B**	351 - 550 Standard size
C	551 - 880

The maximum permissible weight variation between fruit in a box is 75 g for A, 100 g for B and 125 g for C. In any one pack at least 90% of the fruit should be within half the permissible weight variation. Absolute limits for the 10% that may vary from the size group chosen for the pack are:

Size	Minimum Weight	Maximum Weight
A	180 g	425 g
B	250 g	650 g
C	425 g	925 g

Packaging

The usual package is a fully telescopic fibreboard box size 40 cm x 30 cm x 10/12 cm containing 4-5 kg net weight of fruit. Fruit should be individually wrapped in tissue and packed in one layer. While numbers per box can range from 6 to 16, preferred box counts are 12-15 (ie smaller fruit at a cheaper price per piece).

Supply

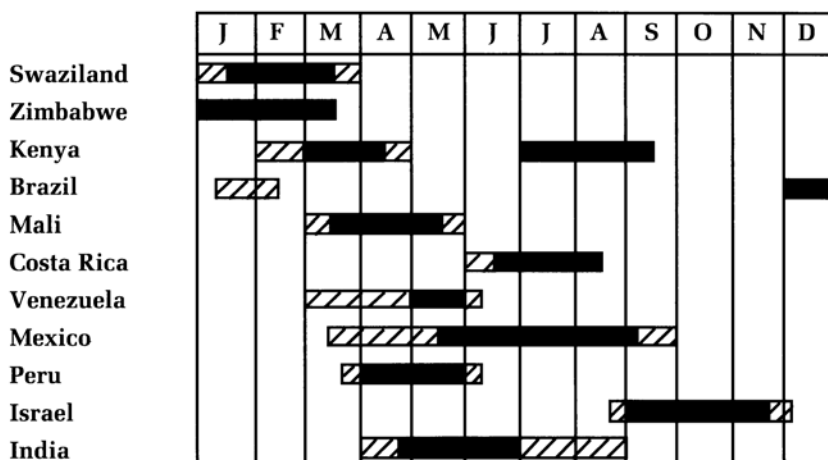
Import statistics cover mangoes, guava and mangosteen. Guava and mangosteen imports are estimated at 5% of the total. Recent import statistics are as follows (in tons).

Mangoes

Country	1989	1990	1991
Sweden	480	505	N/A
Denmark	N/A	261	311
Norway	N/A	191	321
Finland	172	122	131

The large increase in Norwegian consumption in 1991 was due mainly to a NORIMPOD-sponsored generic marketing campaign that resulted in mango imports of 225 tons between May and September 1991.

Mangoes are imported from a large number of countries and no single supplier is dominant. Denmark favours India (25% of 1990 imports); Norway's leading supplier (25%) is Venezuela. Imports to Sweden and Finland from any one country do not exceed 15% of the total.



Price

Mangoes are a medium priced product with prices typically in the range of \$2.40-\$3.70 per kg for air freighted produce and 25-40% lower for sea freighted produce.

Transport

Mangoes are mainly transported by air using direct flights or transited through Paris or Amsterdam. Sea freight shipments are increasing; initial trials with controlled atmosphere containers are encouraging.

Mangoes

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0804 5000.

Country	Full	ACP	GSP	LDDC
Denmark	4%	0%	0%	0%
Sweden	0%	0%	0%	0%
Norway	0.18kr/kg	0%	0%	0%
Finland	0%	0%	0%	0%

Market Summary

The importers are optimistic about future prospects for mangoes in the light of successful promotions. Sea freighted supplies are expected to steadily increase their market share through lower prices. The best opportunities for exporters are to supply high quality, well coloured mangoes during the winter period by sea.

Pawpaw/Papaya



Varieties: In all Nordic markets there is preference for the Hawaiian Solo types, especially Solo and Solo Sunrise. There is specialist interest in Sweden for a hybrid Solo type from Malaysia, Papaya Exotic.

Description: The fruit is pear-shaped, up to 25 cm long. Ripe papaya should be greenish yellow or full yellow and have thin rind. Flesh should be at least 2.5 cm thick, juicy, orange or yellowish in colour and with sugar content above 10% brix. In the centre of the fruit is a hollow space filled with many small inedible seeds.

Field harvest

Ideally fruit should be harvested at the onset of yellowing, equivalent to 5-10% colour. The fruit is extremely delicate and must be handled with great care. Field crates should be lined with sponge. Where fruit intended for sea freight shipment are picked hard and green, this often leads to problems of incomplete ripening. Suitable spray programmes against Anthracnose and black rot are recommended.

Post-harvest

The delicate fruit require a high standard of post-harvest management to avoid fungal diseases attacking bruised and damaged tissue. Good packhouse hygiene, including mild fungicidal washes, is recommended. Serious infections require hot water fungicide treatments. Fungicidal wax applications can assist with Anthracnose control. Storage conditions, 10°C at 90% RH for a storage life of 2-3 weeks; shelf life, 20°C at 60% RH, 2-3 days. Papayas are very susceptible to chilling injury. Affected fruit develop large, hollow spots on the rind and seldom ripen. Papaya is both an ethylene producer and ethylene sensitive.

Pawpaw/Papaya

Grading

There are no international standards. Minimum commercial requirements are that fruit should be:

- intact, clean, sound and fresh in appearance;
- free from spots, growth cracks, mechanical damage;
- free from disease or pest damage;
- full-bodied without any foreign smell or taste.

Fruit should be graded to size. A ripeness grading system similar to that for pineapples is widely used. Maturity grades are:

Maturity Grade	Description
M1	Green fruit with yellow tip
M2	Fruit one third yellow
M3	Fruit half or more yellow

Packaging

The standard export package is a fibreboard box with full telescopic lid, size 30 cm x 40 cm x 10/12 cm. Fruit should be laid diagonally in a single layer, preferably with a protective base of paper wool or wood wool and and wrapping around each fruit.

The usual packing specification is for fruit counts per box of 10-14 giving 4.0 kg net weight. Count 12 is the norm with fruit weights in the range 320-350 g. Papaya Exotic fruit are packed 4-10 per box with a norm of 6.

Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	249	234	N/A
Denmark	N/A	16	25
Norway	N/A	16	18
Finland	42	45	51

Costa Rica is the leading exporter to Finland (50% - 60% of imports) and also to Sweden (almost 50%). Other exporters are Thailand, Israel, Malaysia and Ivory Coast. Supplies are available all year round from Brazil.

Pawpaw/Papaya

	J	F	M	A	M	J	J	A	S	O	N	D
Brazil												
Costa Rica												
Thailand												
Israel												
Malaysia												
Ivory Coast												

Price

Typical prices are in the range \$3.20-\$3.50 per kg for air freighted fruit, with sea freighted prices approximately 50% cheaper.

Transport

Sea freighted shipments are notoriously difficult, requiring specialised post-harvest handling facilities and expert technical management to be successful. In the later stages of the distribution chain wastage rates are very high. Most shipments are sent by air into Copenhagen or Amsterdam.

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0807 20 00.

Country	Full	ACP	GSP	LDDC
Sweden	0%	0%	0%	0%
Denmark	2%	0%	0%	0%
Norway	0.60kr/kg	0%	0%	0%
Finland	0%	0%	0%	0%

Market Summary

For such a well known and established tropical fruit, imports of papaya into Nordic countries are very small. Existing markets are concentrated in the capital cities serving ethnic and 'well travelled/young' market segments. Some sales resistance occurs because much of the produce on sale is rather tasteless due to the practice of importing under-ripe fruit to minimise waste. The major importer/wholesaler/retail groups are cautiously optimistic that imports will increase substantially in response to carefully planned promotions, as in the case of mangoes, and changes in importers' specifications about the state of maturity at harvest and packing.

Passion Fruit



Varieties: There are numerous varieties within two main families, *Passiflora edulis*, the purple skinned passion fruit, and *Passiflora ligularis* or Grenadilla.

Description: The passion fruit is a thick-shelled berry containing numerous seeds, each seed enclosed in an aril. These arils collectively comprise the jelly-like edible flesh. The fruit should be round or egg-shaped, *edulis* 4-5 cm in diameter and deep purple when ripe and Grenadilla 7-8 cm in diameter. The taste is refreshing, though somewhat sour, and it is the most aromatic of fruits.

Field harvest

Purple passion fruits should be picked when the dark purple skin colour has developed and the fruit separates easily from the vine. Although the hard rind or 'shell' becomes wrinkled when fully ripe, fruit should not be allowed to dry out. Skin damage should be avoided by picking into fibreboard cartons or a picking bag.

Post-harvest

Systematic control of brown spot fungal disease is important, through pruning, orchard hygiene, a regular spray programme and proper post-harvest handling. Storage conditions, 8°C at RH 90% 3 - 4 weeks; shelf life, at ambient temperatures, 7 - 10 days. Fruit is susceptible to chill injury below 6°C ambient temperature. The fresh fruit is a prodigious producer of ethylene gas and therefore should be kept separate from sensitive fruit such as avocados.

--- **Passion Fruit** ---

Grading

There are no national or international standards. Minimum commercial requirements are that fruit must be:

- intact, clean and sound;
- free from mechanical damage;
- free of skin cracks or spots;
- free of excess moisture;
- free of foreign smell or taste;
- true to type in size and texture;
- uniformly packaged in terms of origin, variety, quality and size.

Packaging

The standard package is a well-ventilated fibreboard box, with fully telescopic lid, sized 30 cm x 20 cm x 15 cm or 30 cm x 25 cm x 20 cm. The single-layer wooden box currently used in Chile is not liked by importers. Fruit should be packed in double layers giving net weights varying from 2.5 kg to 3.5 kg depending on the type of box and method of packing.

Supply

There are no import statistics for Nordic countries. The most important supplier is Zimbabwe, followed by Chile which is emerging as a major new source.

	J	F	M	A	M	J	J	A	S	O	N	D
Zimbabwe								/			/	
Kenya				/			/					
Chile			/	/	/	/	/	/	/			
Columbia				/	/	/	/	/				

Although imported on a year-round basis, the main sales period is spring.

Price

Typical prices for air freighted fruit range from \$5.10 to £5.80 per kg.

Transport

Fruit is mainly air freighted into Copenhagen or Amsterdam or Frankfurt for onward distribution to the Nordic markets.

Passion Fruit

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0810 9010.

Country	Full	ACP	GSP	LDDC
Sweden	0%	0%	0%	0%
Denmark	2%	0%	0%	0%
Norway	0.27kr/kg	0%	0%	0%
Finland	0%	0%	0%	0%

Market Summary

In each country the market for passion fruit is very small. Most supplies are sourced through established exotic importers in Holland or Germany. There are modest growth prospects in line with overall demand for exotics.

Peaches and Nectarines



Varieties: There are numerous main season varieties including, among peaches, Maycrest, Merrill, Gem Free, Flavour Crest, Elegant Lady and Cal Red. Nectarine varieties are Fairling, Flame Kissed, May Grand and September Red.

Description: Peach fruit are round, coloured yellow blushed with red, and covered with a downy skin. Nectarines are smooth skinned and more vividly coloured, with a glossier skin texture. Flesh, ranging from yellow to white, should be juicy and aromatic in flavour. The flesh encloses a stone with a perforated surface.

Field harvest

Tree-ripened fruits are more flavoursome but susceptible to physical damage and should be hand picked into lining buckets or bins. Fruit picked before full ripeness need less careful handling but if harvested at the hard green stage will not ripen fully and achieve the typical aroma.

Post-harvest

Provided they are sufficiently mature when picked, peaches and nectarines can undergo softening and sweetening after harvest. Serious post-harvest decay from blue mould rot, brown rot or grey mould rot can be minimised by prompt cooling to 0°C at 90-95% RH. Typical storage periods, 2-4 weeks for peaches and 2-6 weeks for nectarines.

Peaches and Nectarines

Grading

Quality and grading standards for peaches and nectarines are defined by EC Regulation 1107/91. The minimum requirements are that fruit must be:

- sound, whole, intact and clean;
- free of foreign smell or taste;
- practically free from pests and pest damage;
- free of abnormal external moisture;
- carefully picked and fully developed and with a state of ripeness and colouring that will enable them to withstand transport and handling and arrive in satisfactory condition;
- uniformly packaged and contain only fruit of the same origin, variety, quality, degree of ripeness and size.

There are two export classes, 'Extra' class and Class 1.

'Extra' class fruit must be:

- of superior quality without defects;
- typical of the variety in terms of shape, development, colouring;
- uniform in colour in each package;
- above 56 mm in diameter or 17.5 cm in circumference;
- packed with not more than 5% of fruit falling short of 'Extra' class and then not below Class 2 standards;
- consistent in size with a maximum of 10% up to 3 mm more, or less, than the diameter stated on the case (or 1 cm when circumference is used).

Class 1 fruit must be of good quality with undamaged flesh free from cracks. Slight defects in shape, development or colouring are permissible. Skin defects may be allowed provided that these do not affect the general appearance, its quality, shelf life or presentation. These defects must not exceed:

- 1 cm in length for defects with an elongated shape;
- 0.5 cm square in total area for other defects.

Up to 10% of the fruit can be below Class 1 standard, but must be within the quality standards of Class 2. Size tolerances are the same as those for 'Extra' size.

Peaches and Nectarines

Peaches and nectarines must be size graded into one of the following classes:

Size code	Diameter (in mm)	Circumference (in cm)
AAAA	90 and over	28.0 and over
* AAA	80 - 90	25.0 - 28.0
** AA	73 - 80	23.0 - 25.0
** A	67 - 73	21.0 - 23.0
** B	61 - 67	19.0 - 21.0
* C	56 - 61	17.5 - 19.0
D	51 - 56	16.0 - 17.5

Packaging

The most common forms of packaging are strong fibreboard cartons of 40 cm x 30 cm x 10/15 cm in size or wooden crates of 30 cm x 50 cm x 10/15 cm in size. 'Extra' class must be packed in a single layer using either a cell-pack or pre-formed tray to hold individual fruit apart or in pre-pack punnets of 0.5 kg or 1.0 kg net weight. Class 1 can be packed in two layers using rigid pocket tray systems or tissue overwraps to separate fruit. The Nordic markets prefer the 5-6 kg net weight box, size A or B fruit with counts of 25 or 28.

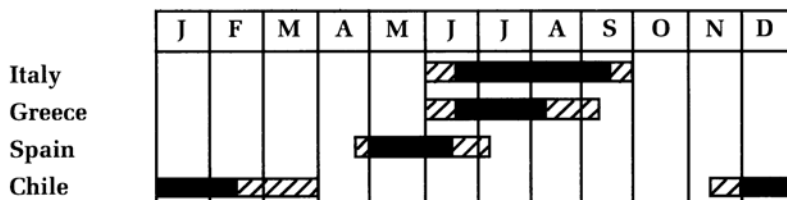
Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	15,110	15,160	14,519
Denmark	N/A	9,766	8,007
Norway	N/A	4,034	3,344
Finland	1,876	2,030	2,154

The main market is during the traditional summer season. Italy dominates exports into all Nordic countries with market shares of Sweden 92%; Denmark 87%; Norway 85%; Finland 67%.

Import during the period from December to May are less than 5% of total annual imports, Chile being the principal source.



Peaches and Nectarines

Price

During the peak summer season, prices range from \$0.60 to \$0.70 per kg for peaches, with nectarines about 25% higher. Off-season imports of peaches have a price of \$1.70 per kg and nectarines \$2.10 per kg. Over-supply during the off-season can rapidly drive prices down to the \$1.0 per kg level.

Transport

Italian fruit is transported by road, being typically five days in transit. Imports from Chile are by sea, taking about 4 weeks and in consequence suffer frequently from loss of quality, particularly during the latter part of the off-season period.

Import tariffs

Tariffs for developing countries come under the GSP system and are duty-free, with the exception of Denmark (see below). For non-developing countries, a complex system of variable-rate tariffs is in place. Tariff number 0809 3000.

Period	Full	ACP	GSP	LDDC
1 - 31 December	22%	9.7%	22%	22%
1 January - 30 November	22%	7.3%	22%	22%

Market Summary

Peaches and nectarines are a well established and important summer fruit imported in large volumes from Southern Europe. There are fair prospects for growth of off-season supply from September to May, particularly into Sweden, Norway and Finland. Nectarines are expected to continue expanding market share at the expense of peaches.

Persimmon



Varieties: The Israeli variety predominates, although Kaki varieties are imported during the summer period. Non-astringent Fuji varieties are occasionally imported.

Description: The fruit resembles the tomato, but is identifiable by its four large sepals; smooth shiny reddish orange skin; orange flesh with one or no seeds. Sharon fruit remains firm when ripe and has a smooth sweet-tasting pulp. Many other varieties have a bitter taste except when the fruit is soft and ripe.

Field harvest

Persimmons should be harvested when hard ripe as indicated by skin colour and sugar content. A pre-harvest spray with a growth-regulating chemical can be used to promote uniform maturity in the crop.

Post-harvest

Storage in polyethylene bags is recommended. Storage conditions for Sharon: 2°C at 90% RH, other varieties 0°C at 90% RH, giving extended storage periods up to 3 months; shelf life, 20°C at 60% RH, 7-10 days.

Grading

There are no national or international standards. Minimum commercial requirements are that fruit must be:

- intact, clean, sound and fresh;
- free of foreign smell or taste;
- free of damage or blemish to the skin;
- uniformly packaged in terms of size and stage of ripeness in each carton.

Persimmon

Packaging

The standard packaging is a fibreboard, open topped carton with reinforced corners size 40 cm x 30 cm x 10 cm. Fruit should be packed in a single layer normally to a count of 24 giving a net weight of 2.5 kg. The count may be 18 at the start and end of the season.

Supply

There are no import statistics. Israel is the dominant supplier of Sharon fruit during October to March. Brazil is the most important summer supplier of Kaki types.

	J	F	M	A	M	J	J	A	S	O	N	D
Sharon												
Israel												
Kaki												
Italy												
Spain												
Brazil												
New Zealand												
Chile												

Price

Israeli Sharon fruit obtain prices from \$1.80 to \$2.20 per kg. Limited quantities of summer fruit from Brazil fetch higher prices from \$2.70 to \$3.25 per kg.

Transport

Israeli Sharon fruit are sea freighted under refrigeration into Marseilles and Rotterdam and trucked into Nordic countries. Supplies from other countries are also sea freighted.

Import tariffs

Rates in percentages ad valorem. Tariff number 0810 9010.

Persimmon

Country	Full	ACP	GSP	LDDC
Sweden	0%	0%	0%	0%
Denmark				
1 December - 31 July	11%	0%	6%	0%
1 August - 30 November	11%	0%	0%	0%
Norway	0%	0%	0%	0%
Finland	0%	0%	0%	0%

Note: Special rates apply in Denmark:

Date	Israel	Cyprus
31 July - 1 December	4.9%	7.0%
1 August - 30 November	11.0%	11.0%

Market Summary

There is widespread optimism about prospects for Sharon fruit. Demand is steadily increasing as the fruit gains popularity with consumers. Given suitable promotion in individual national markets, sustained growth in imports can be expected. Excellent opportunities exist for exporters who can supply sea freighted Sharon during the April - October market window, provided they can match Israeli standards of quality and service.

Pineapples



Varieties: Imports are almost exclusively of Smooth Cayenne type.

Description: The fruit forms on a short sturdy stem that grows through the fruit and ends in a tuft of leaves. The surface of the fruit should be greenish-yellow or golden; green fruit is not acceptable. The flesh should be golden or yellow, juicy and firm without being fibrous. The leaves should be green and undamaged.

Field harvest

Fruit production is programmed through use of growth-regulating chemicals that synchronise flowering. Application of ripening agents to maturing fruits helps to ensure crop uniformity and continuity of supply. Fruit for sea freighting should be harvested after the base of the fruit has begun to turn yellow (M1). Riper fruit coloured up to half height (M2 to M3) should be air freighted.

Post-harvest

Fruit should be cooled as rapidly as possible and treated with fungicide against Black Rot within 6 hours of harvest. Careful handling of the fruit is essential to minimise fungal disease. Storage conditions for unripe fruit, 10°C at 90-95% RH, 3-4 weeks. Ripe fruit require lower temperatures, from 6°C - 8°C at 95%RH, giving a storage life of 2-3 weeks. Shelf life at 20°C is approximately 3 days. Chilling injuries may result in brown or dull black skin, watery flesh and wilted leaves.

Grading

There are no national or international standards for pineapples. However, by convention Ivory Coast grading standards are generally observed.

Pineapples

Fruit are graded by weight according to the following code.

Size code	Size specification	Recommended transport
A*	1.5 kg and over	Air freight
B*	1.1 kg - 1.5 kg	Sea freight
C*	0.8 kg - 1.1 kg	Sea freight
D	below 0.8 kg	Sea freight

Pineapples are normally packed horizontally to count 6 for size A, count 12 for sizes B & C, and count 20 for size D.

Packaging

For sea freight the standard package is a fibreboard carton with fully telescopic lid size 50 cm x 40 cm x 16 cm to fit the reefer pallets. For air freight the carton size is normally 40 cm x 30 cm x 15 cm.

Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	1,880	1,789	N/A
Denmark	N/A	2,898	3,033
Norway	N/A	760	806
Finland	740	754	674

Imports by NAF into Hamburg, included within these national statistics, totalled 1,100 tons in 1991.

The Caribbean area has replaced West Africa as the main supply region, particularly for sea freighted fruit. Honduras, Costa Rica and the Dominican Republic are the major suppliers throughout the season.

	J	F	M	A	M	J	J	A	S	O	N	D
Honduras												
Costa Rica												
Dominican Republic												
Ghana						▨	▨	▨	▨	▨		
Ivory Coast				▨							▨	▨

Pineapples

Price

Sea freighted fruit have prices in the range \$0.85-\$1.0 per kg. For air freighted fruit the range is \$2.20-\$2.75 per kg.

Transport

Pineapples are mainly shipped by sea in refrigerated vessels using reefer containers. West African sea freight rates have become more expensive than those from the Caribbean.

Import tariffs

Rates in percentages ad valorem. Tariff number 0804 3000.

Country	Full	ACP	GSP	LDDC
Sweden	9%	0%	0%	0%
Denmark	9%	0%	9%	0%
Norway	0%	0%	0%	0%
Finland	0%	0%	0%	0%

Market Summary

The market has matured and no large increases in demand for the fresh fruit are expected. Canned pineapple retains its popularity with consumers. There are limited opportunities for new suppliers of sea freighted pineapples offering better colouration than Caribbean sources at competitive prices. There is sufficient demand to support a programme of premium-quality air freighted fruit.

Sweet Melons



Varieties: In the winter melon group, the Yellow Honeydew types, Honey melon or Yellow Honey melon, are popular. White Honeydew, green Tendril and Ogen melons are not imported. In the net melon group, Galia is the most popular. Demand for cantaloupes, particularly the Charentais variety, is very limited.

Description: Honeydew melons are normally oval in shape with longitudinal grooves running through the smooth yellow skin. Flesh should be juicy; colour varies from light green to the more usual yellow.

Galia melons are round, smaller than honeydew, greenish yellow in colour with a net pattern on the skin. Galia has light green flesh with an excellent aroma and taste. Minimum sugar content should be about 10% brix. Charantais melons are distinctive for their juicy orange flesh with an excellent flavour.

Field harvest

Determining the optimum time to harvest honeydew melons is not easy. It can be determined scientifically by measurement of sugar content but account has to be taken of transit time. Colour changes to the ground spot and stalk can be used as a practical guide. Both net and cantaloupe types are best harvested at 'full slip' when the fruit stalk is ready to separate naturally from the vine. Fruit destined for longer transit times can be harvested at the 'half slip' stage without detrimental changes to flavour and taste. Because of their short storage and shelf life, premature harvesting is common.

Sweet Melons

Post-harvest

Melons are very sensitive to damage and a high standard of care throughout the marketing process is required. Prompt cooling of all melons is essential to maintain sugar levels. Storage conditions vary for each group.

Type	Storage temperature	Relative humidity	Shelf life (days)
Net	6-9°	95-90%	10-14
Net	20°	60%	3-5
Honey	10-14°	85-90%	16-20
Honey	20°	60%	10-14
Cantaloupe	3-5°	85-90%	10-14
Cantaloupe	20°	60%	3-5

Ethylene treatment, to promote uniform ripening, is usually applied to Honeydew melons prior to sea freight shipment. Waxes incorporating fungicides can also be used.

Grading

The minimum quality standards for fruit (see UN/ECE FFV-23 &)ECD: No38) require them to be:

- sound, whole, intact, clean;
- fresh in appearance;
- sufficiently developed and ripe;
- typical in shape and colouring for the variety;
- free of foreign smell or taste;
- uniformly packaged in terms of origin, variety, commercial grade, size, shape, colour and maturity.

There are two classes: Class 1 and Class 2

Class 1 melons must be of good quality, well developed, free of cracks and bruises. Slight cracks of less than 2 cm around the peduncle are permitted. The fruit must be graded by weight or diameter. The heaviest melon should not weigh more than half as much again as the smallest. If the size is expressed in diameter, the largest melon must not exceed the diameter of the smallest by more than 20%. No more than 10% of fruit, by number or weight, can be below Class 1 standards.

Class 2 melons must satisfy the minimum requirements. Provided that they retain their essential characteristics with regard to quality, shelf life and presentation, then some slight defects in shape, skin colour and cracking are allowed.

Sweet Melons

Packaging

Standard packaging: single layer in fully telescopic fibreboard box with ventholes, typically 50 cm x 40 cm x 15 cm taking 10 kg of fruit for sea freight shipment. Air freight shipments are normally in 5 kg boxes. In 10 kg boxes, Honeydew counts of 10-12 are preferred with 8's for the catering trade. Usual counts for Galia, packed in 5 kg cartons, are 8-10. To prevent bruising, melons normally have to be packed with filling materials, ie tissue paper, wood wool or shredded paper, or in compartmented trays to prevent fruit-to-fruit damage. Expanded plastic nets can be used instead of loose filling materials. Honeydew melons are generally packed on their sides, whereas other melons are packed on their base.

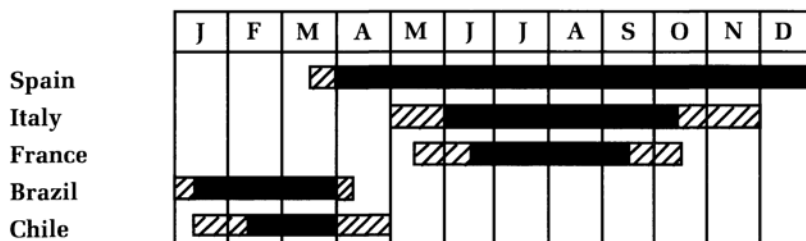
The sea freight Brazilian carton, measuring 50 cm x 40 cm x 15 cm, uses an interlocking cardboard divider to separate the fruit.

Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	13,391	13,369	15,665
Denmark	N/A	4,244	6,024
Finland	726	636	825

Norway's import statistics do not separate sweet melons from watermelons and have therefore been excluded. Yellow Honeydew melons account for approximately 90% of sweet melon imports into Nordic countries. The fruit is available year-round but peak sales occur during the summer supplied from Southern Europe. Spain is the leading supplier, accounting for approximately 50% of total Honeydew sales. Brazil is the main supplier during winter months, with Chile emerging as an alternative. Melon imports into Finland are more evenly spaced throughout the year because of high tariff rates on European supplies. Of Finnish melon imports in 1991, 326 tons of Honeydew came from Spain and 237 tons from Brazil.



Sweet Melons

Price

Prices for Honeydew melons are fairly stable throughout the year, except during the transition from Brazil to Spain when shortages can temporarily increase prices by 30% - 50%. Average prices are \$8 per box of 10 kg for Spanish; \$14 per box of 10 kg for Brazilian.

Transport

European supplies come by road and South American supplies by sea freight, usually into Rotterdam.

Import tariffs

Rates in percentages ad valorem. Tariff numbers 0807 1020 and 1090.

Country	Full	ACP	GSP	LDDC
Sweden				
16 June - 30 September	18%	0%	0%	0%
1 October - 15 June	0%	0%	0%	0%
Denmark	11%	0%	11%	0%
Norway	0%	0%	0%	0%
Finland	25%	0%	0%	0%

Market Summary

The rapid market expansion for summer fruit over the last five years is slowing down as the market matures. Export opportunities are for winter supplies (January - April) by sea to compete with South American sources, particularly on a quality basis.

Asparagus



Varieties: Numerous different varieties are grown, particularly those originating from the University of California such as UC 157, F1 and F2 UC 157 and UC 72. Other American varieties are Mary Washington and Mary Washington 500 W, orientated to 'Jumbo' production, and Lucullus, Franklin, Rutgers Beacon and Boomlin.

Description: Asparagus spears are long, slim tender shoots with tightly closed leaves at the tip, that grow rapidly from the fleshy underground stem or 'crown' of the asparagus plant. The spear tips should be closed, undamaged and have a straight stem. Asparagus should break easily when fresh and exude juice if punctured. The flesh must not be stringy or woody. White asparagus flesh should be extremely soft.

Field harvest

White asparagus is grown in beds that have been earthed up. The spears, growing up through the loose earth ridges, are harvested just as the tips break the surface. Green asparagus spears grow out of flat beds, making harvesting much easier and cheaper. Most commercial plantations of asparagus, either white or green, are harvested in their natural spring period. Harvesting normally has to be carried out at least once per day using sharp knives or long-handled blades.

Post-harvest

Asparagus spears require extremely high standards of handling, cooling and packing if they are to reach the market in good condition. After cutting, the spears should be washed, trimmed to size, graded and bundled. Rapid cooling, using chlorinated iced-water in a hydrocooler, is essential. Bacterial soft rot is the

Asparagus

commonest post-harvest disease and can cause serious losses. Control is through good hygiene, handling and cooling. Storage is possible for up to 6 days at 0-2°C at RH above 95%. (See International Standards: ISO 4186, Asparagus - Guide to Storage. ISO 6882, Asparagus - Guide to Refrigerated Transport.)

Grading

Asparagus grades are defined by the ECE regulation No 454/92. Quality standards have also been issued by UN/ECE: No FFC-04 and by the OCED: No 19. The EC minimum requirements are that spears must be:

- whole, intact, sound and fresh smelling;
- clean, free of foreign smell and taste;
- practically free from pests and foreign matter;
- practically unbruised;
- free of damage caused by rodents or insects;
- free of excess external moisture;
- cut clean square at the base of the spear;
- able to withstand transport and handling and arrive in satisfactory condition;
- uniformly packaged in terms of origin, quality, colour and size.

The asparagus must not have been treated, apart from cooling, to preserve or restore its fresh appearance. In addition the spears must not be hollow, split, peeled or broken. Small cracks which appear during harvesting are allowed provided that they do not exceed the specified tolerances. Small differences are allowed in spear colour. 'White' asparagus can have up to 10% violet asparagus, 'green' asparagus can have up to 10% of another colour.

There are three classes: 'Extra' class, Class 1 and Class 2. For all classes spear diameter is measured at its mid-point.

'Extra' class spears must be of superior quality, well formed and practically straight, with very compact tips. A trace of rust is allowed provided it can easily be removed by peeling. 'White' tips must be white; only a faint tint of pink is allowed provided it appeared after cutting. 'White' and 'violet' spears should not have any traces of woodiness, but 'green' spears can have a slight trace. No more than 5% of spears should fall short of 'Extra' class standards and then not below Class 1 standards.

The length of the spears must be 17-22 cm for long asparagus; 12-17 cm for short asparagus. Green asparagus can have a maximum length of 27 cm, but at least one third must be green. Sizes under 12 cm are called asparagus tips.

Asparagus

Spears must have a diameter of 12-16 mm. Spears of 16 mm must not have a diameter variation of over 8 mm in each bundle. Up to 10% of spears can be outside the dimensions indicated subject to a maximum deviation of 1 cm in length and 2 mm in diameter.

Class 1 Asparagus must be of good quality and well formed with compact tips. They may be slightly curved. A trace of rust is allowed provided that it can easily be removed by peeling. 'White' tips may be slightly coloured before cutting, and a faint tint of pink is allowed provided it disappears after cooking. Slight scarred cracks which appear after harvesting are allowed. No more than 10% of the spears should fall short of Class 1 quality standards and then not below Class 2 standards. Class 1 must have a diameter of 10-16 mm. Over 16 mm is allowed, provided that the maximum variation within the bundle does not exceed 10 mm. The length specifications are the same as for 'Extra' class. Up to 10% of spears can be outside the size indicated subject to a maximum deviation of 1 cm in length and 2 mm in diameter.

The Swedish market for asparagus is split 50/50 between white and green. Green asparagus is expected to increase in popularity at the expense of white. Demand in the other Nordic countries is for green asparagus. The popular size, common to all markets, is for spears between 16 mm and 20 mm. 'Jumbo' spears, 20 mm plus, are mainly used in the catering trade. Smaller spears in the range 10 mm/12 mm to 16 mm are a rapid growth sector of the green asparagus market.

Packaging

The usual international carton for air freight is a trapezoidal box of base size 25 cm x 20 cm made from strong double wall, wax fibreboard. The box contains 12 bundles of 500 g each, 6 kg net weight. The spears should be packed upright with the stems standing on a wet sponge or a piece of wet cardboard. European asparagus is often packed in wooden crates, either horizontal or standing upright; net weights of 6 kg or 12 kg are common.

Pre-packed asparagus is the normal market system in Denmark. Retail outlets prefer 16-20 mm spears, laid neatly in 250 g clear plastic trays over-wrapped with micro-perforated PVC film. The market for pre-packs in the other Nordic countries is very small, the norm being unwrapped bundles of either 250 g or 500 g net weight.

Supply

Recent import statistics are shown overleaf (in tons).

Asparagus

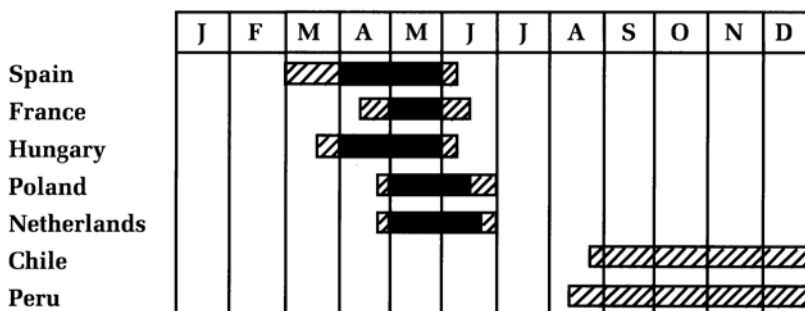
Country	1989	1990	1991
Sweden	111	117	N/A
Denmark	N/A	90	176
Norway	N/A	81	82
Finland	35	38	39

Import tariffs

Rates in percentages ad valorem. Tariff number 0804 30 0090.

Country	Full	ACP	GSP	LDDC
Sweden	9%	0%	0%	0%
Denmark	9%	0%	9%	0%
Norway	0%	0%	0%	0%
Finland	0%	0%	0%	0%

The overall market for fresh asparagus is very small compared with other European markets. Approximately 80% of all imports are from Europe during the period March to May, about half coming from Hungary and Poland. Import quantities during the rest of the year are very low, and mainly for the catering trade.



Price

Asparagus is a high priced 'luxury' product. Prices in the spring for 'green' range from \$3.40 to \$4.10 per kg, and for white around \$6 per kg. Air freight supplies from South America average \$7.00 to \$7.50 per kg.

Asparagus

Transport

Supplies from Europe come by road, and from other sources exclusively by air. Sea freight is not feasible for asparagus.

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0709 2000.

Country	Full	ACP	GSP	LDDC
Sweden				
1 May - 30 January	14%	14%	14%	0%
1 July - 30 April	0%	0%	0%	0%
Denmark				
1 March - 30 September	16%	16%	16%	16%
1 October - 31 December	16%	9.6%	12%	0%
1 - 15 January	16%	7.2%	12%	0%
16 - 31 January	16%	9.6%	12%	0%
1 - 28 February	16%	16%	12%	0%
Norway				
1 May - 14 November	0.25 kr/kg	0%	0%	0%
15 November - 30 April	0%	0%	0%	0%
Finland	16%	16%	16%	0%

Market Summary

Green asparagus is the preferred variety. The market is fairly static in Sweden, Norway and Finland, with consumer interest restricted to the cheaper supplies that are available during the European spring.

Denmark's more sophisticated pre-packed market is growing strongly. Opportunities exist for air freighted asparagus in the period from December to February.

Aubergines



Varieties: The most popular are the dark purple Florida types, Black Beauty and Long Purple.

Description: Generally elongated oval, but sometimes round, with dark purple, almost black, skin. The green spiny calyx should be intact with a short, neatly-trimmed stalk. The pulp is spongy, pale and contains a number of light brown seeds.

Field harvest

Aubergines are harvested immature when crisp and firm. They should be cut from the plant to leave a small stem. Careful handling is required to avoid skin damage.

Post-harvest

Aubergines have a rather short storage life. Common post-harvest diseases include grey mould rot, rhizopus rot and phomopsis rot. Exposure to ethylene is detrimental since it hastens senescence, characterised by browning. Storage conditions: 8-10°C at 90-95° RH for 10-14 days; shelf life at 20°C, 3-4 days.

Grading

Aubergine grades are defined by EC Regulations 1292/81 and 1822/81 which stipulate that all aubergines must be:

- whole, firm, sound, clean;
- fresh in appearance;
- intact in calyx and peduncle, which may be slightly damaged;
- sufficiently developed, without their flesh being fibrous or woody and without overdevelopment of seeds;
- free of abnormal external moisture;
- free of any foreign smell or taste.

Aubergines

Two classes are defined, Class 1 and Class 2.

Class 1 must be of good quality and practically free of sun scorch. They may show slight defects in shape, discolouration at base, bruising and/or healed cracks of not more than 3 sq cm.

Class 2 may show defects of shape and colouring, slight sun-scorch or dry superficial defect not more than 4 sq cm.

Specification tolerances are a minimum diameter of 40 mm for long aubergines, maximum variation 20 mm; minimum diameter of 70 mm for global type, maximum variation of 25 mm.

The following weights are recognised: 125 g, 225 g*, 300 g*, 400 g*, 500 g.

The minimum weight is 100 g, most popular sizes being in the range 225 g to 400 g. There is an emerging interest in 'jumbo' aubergine at 500 g. Long aubergines, such as Long Purple, should be 25 cm in length, 8 cm diameter; Black Beauty, 12.5 cm long, 9 cm diameter.

Packaging

The standard packaging is either the Dutch fibreboard box, 30 cm x 40 cm x 15 cm, or Spanish box, 40 cm x 30 cm x 22 cm. Both have full telescopic lid and are packed double layer to give a net weight of 5 kg. Blue paper (Spanish) dividers are used to protect the aubergines. Eighty boxes fit a Euro-pallet.

Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	1,030	1,186	N/A
Denmark	N/A	250	293
Norway	N/A	166	190
Finland	146	163	177

Imports from the Netherlands supply between 50% (Sweden) and 75% (Finland) of the total into Nordic countries. Spain, Italy and Turkey are the other main European producers while The Gambia is emerging as an off-season supplier.

Aubergines

	J	F	M	A	M	J	J	A	S	O	N	D
Holland												
Spain												
Italy												
Turkey												
Gambia												
Israel												

Price

Prices reflect the seasonality of the market, the average price being \$2.20 per kg. During the December to February period prices peak at \$4.50 per kg, falling to \$1.60 in late summer.

Transport

Supplies from Europe are by road. Off-season imports are mainly air freighted.

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0709 3000.

Country	Full	ACP	GSP	LDDC
Sweden				
1 May - 30 November	10%	10%	10%	0%
1 December - 30 April	0%	0%	9%	0%
Denmark				
1 April - 31 December	16%	0%	16%	0%
1 January - 31 March	16%	0%	9%	0%
Norway	0.80kr/kg	0%	0%	0%
Finland	5%	0%	0%	0%

Market Summary

The market for aubergines has matured. Demand in all Nordic countries has stabilised and no significant increases in consumption are expected. Dutch aubergines, purchased through the vegetable auction system, have become well established with consumers for their very high standard of visual appearance and uniformity. The best opportunity for exporters lies in the period December - March, for which importers are keen to source high quality aubergines.

Beans



Varieties: A broad range of cultivars are marketed within the *Phaseolus vulgaris* species, the more popular being stringless bobby beans; others are 'fine' or 'extra fine' beans.

Description: Bobby beans have thin straight pods free from fibres, between 10 cm and 20 cm long, 1.0-1.5 cm thick, light to dark green in colour. More slender needle type beans, 0.5-1.0 cm thick, 10-15 cm long, are classed as 'fine' and 'extra fine'. Bean pods are fleshy, round, with 8-12 underdeveloped seeds at harvest.

Field harvest

Bobby beans are normally harvested on alternate days while fine beans need to be harvested daily. Reducing field heat levels by harvesting early in the day, the use of shade covers and rapid transport to the packhouse are all important to achieve optimum quality.

Post-harvest

Harvested beans have an extremely high rate of respiration and consequently a very short storage life. Rapid cooling, grading and packing, within 1-2 hours, is essential. Storage conditions, 7-8°C at RH 95-100%, giving storage life of 1-2 weeks. Shelf life at 20°C is a maximum of 1-2 weeks.

Grading

International standards for green beans cover both grading and quality criteria:

Grades: EC regulation No 58/62
(Amendment No. 920/89)

Quality: UN/ECE: No FFV-06; OCED: No 15.

Beans

The EC minimum requirements are that all beans must be:

- whole, clean, intact, sound and fresh in appearance;
- free of damage caused by insects and pests;
- free of foreign smell or taste;
- free of excess moisture;
- able to withstand transport and handling and arrive in satisfactory condition;
- uniformly packaged in terms of origin, variety and quality and, in the case of needle (fine) beans, the same size.

The two groups of beans, bobby and fine beans (otherwise called 'needle' or 'filet' beans), have slightly different grading standards.

Class 1 bobby beans must be of good quality, young, tender, stringless, easily broken and practically free of spots caused by wind but free of other blemishes. The seeds must be small and tender. The quality tolerances are the same as those for Class 1 fine beans.

Fine beans for export are graded into two classes, 'Extra' class and Class 1.

'Extra' class fine beans must be of superior quality. They must be turgescient, very tender, seedless, stringless, and free of defects. No more than 5% can fall short of 'Extra' class standards and then not below Class 1 standards. They must be classified as extra fine or very fine with a maximum pod width of 6 mm. A maximum of 10% can be outside the size specification.

Class 1 fine beans must be of good quality. Slight colouring defects, soft seeds and short soft strings are allowed provided that they do not affect the general appearance of the produce. No more than 10% can fall short of Class 1 standards and then not below Class 2, but not more than 5% may have strings. Beans can be graded into two sizes - very fine and fine with a maximum width of 9 mm. A maximum of 10% can be outside the size specifications.

Packaging

Both fine and bobby beans are sold either loose in a lidded fibreboard box, 30 cm x 20 cm x 10/15 cm, net weight 2.2 kg, or sold as pre-packs in a similar size box containing 12 x 200 g or 10 x 250 g trays.

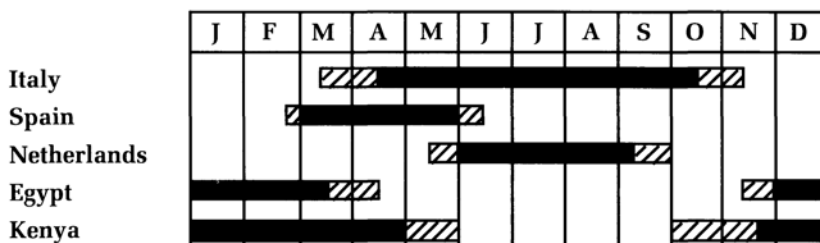
Beans

Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	156	149	N/A
Denmark	N/A	21	35
Norway	N/A	23	24
Finland	N/A	31	27

The market for fresh beans is small and most supplies are imported through intermediate agents in Holland or Germany. Major suppliers for bobby beans are Spain, Italy and Holland during the summer. Kenya supplies most of the fine beans during the winter; the major off-season source for bobby beans is Egypt.



Price

Bobby bean prices for air freighted boxes average \$2.40 per kg during the winter. Fine beans from Kenya during the same period range in price from \$2.50 to \$3.80 per kg, with pre-packed beans obtaining higher price levels around \$5 to \$6 per kg.

Transport

Supplies by air freight are flown into Holland, Germany and France and, as with European produce, are transported by road to their final destination.

Beans

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff numbers 0708 2010 and 2090.

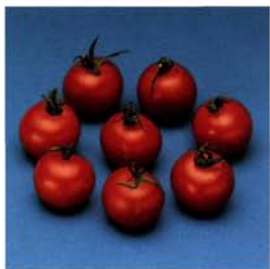
Country	Full	ACP	GSP	LDDC
Sweden				
1 March - 31 December	7%	0%	0%	0%
1 January - 29 February	0%	0%	0%	0%
Denmark				
1 October - 30 June	13%	0%	13%	0%
1 July - 30 September	13%	0%	17%	0%
Norway	0.50 kr/kg	0%	0%	0%
Finland	9%	9%	9%	0%

In both Finland and Norway an import licence is required by the importer to protect domestic production during the summer/autumn period. The licence entitles the importer to specified quantities over a specific period.

Market Summary

The market for fresh beans, both bobby and fine types, is very small in all Nordic countries because of the strong tradition among consumers to use frozen produce. Prices are relatively low and the market is adequately supplied from major importers in Europe. Demand is expected to increase slowly from its present low base as part of a trend towards fresh produce for healthy eating.

Cherry Tomatoes



Varieties: The most popular are Evita and Sweet Israeli types. Varietal development is dynamic; growers need to keep themselves informed about the response in target markets to recent releases.

Description: Cherry tomatoes are smooth-skinned, round, small sized, between 15 mm and 30 mm in diameter, bright red in colour with an attached green calyx. They should have a distinctive sweet juicy flavour with minimum sugar levels of 5.5% brix.

Field harvest

Cherry tomatoes are susceptible to damage which should be minimised by careful hand harvesting followed by primary grading in the field. They are normally harvested at three-quarter ripe stage to develop full flavour during transit. After washing and final grading they should be packed by the grower into plastic punnets.

Post-harvest

Tomatoes should be cooled rapidly after packing. Recommended storage conditions for nearly ripe to ripe fruit are: 8-10°C at RH 90%, for a storage life of 10-14 days. Chilling injury occurs at lower temperatures leading to loss of flavour and shape. Mature green fruits are especially susceptible to injury from low temperatures and are best kept at 13°C. Shelf life at 20°C is two weeks.

Cherry Tomatoes

Grading

Cherry tomatoes are subject to the same quality standards as other tomatoes, see EC No 778/83 amended by Regulation 408/90. The minimum requirements are that fruit should be:

- whole, intact, sound, clean;
- fresh in appearance;
- free of foreign smell or taste;
- free of excess moisture;
- uniformly packaged in terms of origin, variety, quality, size, colour and ripeness.

Two quality classes are defined for cherry tomatoes: 'Extra' class and Class 1.

'Extra' class must be of superior quality, firm and round. They should be free from 'green-backs' and other defects, with the exception of very slight superficial defects which do not affect the general appearance, quality, shelf life and presentation. No more than 5% can fall short of 'Extra' class standards and then not below Class 1 standards.

Class 1 cherry tomatoes must be of good quality, reasonably firm, round and characteristic of the variety. Slight defects in shape, colouring, skin and very slight bruises are permitted, provided that the general appearance, quality, shelf life and presentation are not affected. No more than 10% can fall short of Class 1 standards.

Commercially acceptable sizes range from 10 mm to 30 mm in diameter, depending on variety. Preference is for 15-25 mm. Size uniformity in the punnet is essential.

Packaging

Most cherry tomatoes are pre-packed normally in 250 g plastic punnets either lidded or over-wrapped with micro-perforated film. The addition of 5-10% more is advisable to allow for weight loss in transit. Punnets are usually made of thin clear PVC, manufactured using CFC-free techniques, but recent trends favour coloured paper pulp punnets. The standard box is made of fibreboard with interlocking tabs for vertical stacking, size 40 cm x 30 cm x 8/10 cm, 2 kg net weight, packed with 8 x 250 g punnets.

Supply

There are no statistics specifically relating to cherry tomatoes. Domestic production is significant in Denmark. The Netherlands is the leading

Cherry Tomatoes

supplier during the period April to October. Off-season suppliers are Spain, Israel, Cyprus and Zimbabwe.

	J	F	M	A	M	J	J	A	S	O	N	D
Netherlands			■	■	■	■	■	■	■	■	■	
Spain	■	■	■								■	■
Israel	■	■	■									■
Cyprus	■	■	■	■	■							
Zimbabwe	■	■	■							■	■	■

Price

Prices remain fairly steady throughout the year between \$5.00 and \$6.40 per kg.

Transport

Supplies from Europe are transported by road. Other imports are air freighted either direct to Copenhagen or Stockholm or via Holland or Germany.

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff numbers 0702 0010 and 0090.

Country	Full	ACP	GSP	LDDC
Sweden				
16 April - 15 May	10%	0%	0%	0%
16 May - 31 October	17%	0%	0%	0%
1 November - 15 April	0%	0%	0%	0%
Denmark				
1 November - 14 May	11%	11%	11%	11%
15 May - 31 October	18%	18%	18%	18%
Norway				
1 November - 31 May	0%	0%	0%	0%
1 June - 31 October	2 kr/kg	0%	0%	0%
Finland	10%	10%	10%	0%

In both Norway and Finland the importer requires a licence which specifies quantities during the period mid-May to mid-October.

Cherry Tomatoes

Market Summary

There has been a steady increase in demand in recent years which is expected to continue, consumer purchases being evenly spread throughout the year. As the product breaks through the volume threshold and becomes widely accepted, exporters will have to concentrate on achieving superior taste and presentation to supply an increasingly competitive market.

Mangetout



Varieties: There is a fairly wide range of varieties all selected from edible-podded cultivars of the *Pisum sativum* species. Choice depends on the optimum growing system for local conditions. Most popular are Mammoth Melting, which requires a 2 metre high post and wire trellis system, or open-field dwarf varieties of the Oregon Sugar type. Other names for mangetout are Snowpea or Sugarpea.

Description: In appearance mangetout resemble small immature pea pods, flat, with pea seeds just showing and having a conventional pea shape, length 7-10 cm, width 2 cm, straight with very small stem. Pods are pale to deep green in colour with a juicy, crunchy, sweet taste. Young ripe mangetout should snap easily.

Field harvest

Mangetout require daily hand picking, leaving a short piece of stem on the pod. Accurate picking to the required length and before the pods become over-mature is essential. Harvesting lasts for 3-6 weeks, during which time production builds up steadily to a mid-season peak.

Post-harvest

Harvested pods have an extremely high respiration rate and consequently a very short shelf life. Rapid cooling, grading and packing is essential. Storage conditions, 1-2°C at RH 95%-100% for a storage life of 1-2 weeks; shelf life at 20°C is 3-4 days.

Grading

Minimum standards are specified under EC regulations for beans (which include mangetout) No 58/62 (amendment No 920/89).

Mangetout

There are two classes, Class 1 and Class 2.

Class 1 mangetout must be:

- of good quality, free from blemish except for slight traces of wind damage;
- characteristic of the variety in colour, shape, size;
- young and tender such that they can be easily broken in the hand;
- have small and tender seeds and closed pods;
- stringless;
- no more than 10% can fall short of Class 1 standards and then not below Class 2 standards.

Class 2 mangetout must be:

- of marketable quality;
- reasonably young and tender;
- similar in pod and seeds to Class 1, although seeds may be larger;
- free from disease and frost damage;
- no more than 10% can fall short of Class 2 standard but must meet minimum requirements.

The following are allowed: slight wind damage; minor superficial blemish; strings. Commercial size requirements are for pods 7-10 cm in length and 1-2 cm in width.

Packaging

Mangetout are usually sold pre-packed in weights of 250 g, 300 g or 400 g. The normal method is tray overwrapped with clear PVC but this is being superseded by the recently developed sachet packing into a micro-perforated bag. The standard package is a fibreboard box, fully telescopic with ventilation slots, size 30 cm x 20 cm x 15 cm and net weight 2.2 kg.

Supply

Recent import statistics are shown below (in tons).

Country	1989	1990	1991
Sweden	N/A	N/A	N/A
Denmark	N/A	400	352
Norway	N/A	57	67
Finland	2	2	6

Mangetout

Guatemala is the traditional supplier to Europe but Zimbabwe and Zambia have developed as major new sources over the last five years.

	J	F	M	A	M	J	J	A	S	O	N	D
Guatemala												
Zambia												
Zimbabwe												
Spain												
Nigeria												

Price

Prices average \$3.00 per kg, reducing by 30% during July and August. Peak prices, up to \$4.50 per kg, occur during the off-season from December to March.

Transport

Non-European supplies are exclusively air freighted.

Import tariffs

Rates in percentages ad valorem (except where stated). Tariff number 0708 90.

Country	Full	ACP	GSP	LDDC
Sweden				
1 March - 31 December	7%	0%	0%	0%
1 January - 19 February	0%	0%	0%	0%
Denmark	14%	0%	0%	0%
Norway	0.5 kr/kg	0%	0%	0%
Finland	9%	9%	9%	0%

In both Norway and Finland the importer requires a licence which specifies the permitted quantities over a specific period.

Market Summary

Except in Denmark, consumers are unfamiliar with mangetout because of the long established usage of frozen peas and beans. Steady growth is expected as demand for fresh produce increases, the best potential lying with the catering sector. There is a potential for retail promotion stressing the convenience of mangetout and particularly targeting the growing single-person household sector.