

Introduction

The information provided on each product falls into three broad categories.

First, basic market requirements that relate directly to the farm and production are outlined, including recommended varieties, external appearance and important characteristics, followed by advice on harvesting.

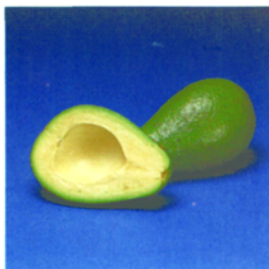
Information is then presented on post-harvest processes to prepare the produce for market. Wherever possible, international, EC or national grading standards are set out as well as the quality standards the trade require. (As these are constantly being revised, however, exporters are advised to ensure that they obtain the latest standards.) A section on packaging describes labelling requirements and typical packaging materials and methods currently being used. Internal volume to weight ratios are supplied wherever possible to assist exporters in specifying new packaging dimensions to match Euro-pallet sizes, and post-harvest systems are described and recommendations made.

Finally, an indication of market size is provided, together with import trends, monthly supply patterns and the seasonality of supply from major sources. There is also an indication of gross wholesale prices - the recorded price at which wholesalers sell to retailers. All prices are given before the deduction of commission, handling, duty, clearance and transport costs, and no account is taken of the high levels of unsold produce. (Appendix 5, however, gives examples of ways to calculate likely net returns.) The figures which indicate typical gross wholesale prices in the past should therefore be treated with great care, but should nevertheless give exporters a broad indication of the profitability of products they are considering for export. It is nevertheless important to obtain more specific information from potential importers and to conduct extended test marketing to assess actual prices before commencing commercial scale export. In conclusion, each product section ends with an outline of transport options and trends, tariff details, optimum supply periods, and how to promote the product and develop sales.

Throughout this handbook the following codes have been used:

Size grades:	*acceptable	**strongest demand			
Supply patterns:	 peak supply	 restricted supply			
Market windows: eg.	    				
	 possible months to send	 good months to send	 best months to send		

Avocados



Varieties: Green varieties are most popular. Fuerte, then Ettinger and Nabal. Hass with its dark, crumpled skin is not popular.

Appearance: Fruit should be pear shaped, green, with no marks on the skin and without a stalk.

Internal characteristics: Firm but not too unripe, no bruising. Smooth creamy taste with no fibre, 'soapy' taste or dark spots in pulp.

Production and harvesting

Fruit must be fully mature but hard when harvested. No reliable method of assessing maturity is available. With small scale growers, maturity is often based on experience coupled with fruit appearance, such as the fruit skin losing its glossy appearance, the fruit taking on a full rounded appearance and fruit stalk colour changing from green to yellow. Methods of maturity assessment such as % oil content and, more recently, dry matter content are more complex and need to be prescribed for variety and location. Harvest fruit early in the day. Use clippers to cut fruit stalk to 1.5 cm and trim stem back to 2-3 mm before packing.

Grading

Standards set to define quality at export (see UN/ECE No. FFV-42). The EC minimum requirements are that the fruit must be:

- whole, intact,
- sound: rotting & deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- maximum stalk length of 10 mm, absent stalk acceptable,
- free of abnormal external moisture,

Avocados

- free of foreign smell or taste and the ripe fruit free of bitterness,
- free of damage due to low temperature,
- sufficiently mature so that ripening process can be completed,
- in packages that are uniform in terms of origin, variety, quality and size.

There are three classes: 'Extra' class, Class I and Class II.

'Extra' class avocados must be of superior quality and typical in shape and colouring of the variety. The skin must be free of defects except for very slight, superficial marks. If the stalk is present it must be intact. Tolerances in terms of quality are that no more than 5% of fruit should fall short of 'Extra' class quality standards and then not below Class I standards. A maximum of 10% can be outside the size range stated but not above or below the size standard immediately above or below the size marked. This size tolerance covers all classes of fruit.

Class I avocados must be of good quality and typical in terms of shape and colouring of the variety. The following slight defects are allowed provided they do not affect the general appearance, keeping quality and presentation: slight defects in shape and colour, slight skin defects not exceeding 4 cm square, and slight stalk damage. The fruit flesh must be free of defects. No more than 10% of the fruit should fall below Class I standards and then not below Class II standards.

Class II avocados must retain their essential characteristics and satisfy the minimum requirements. There can be defects in shape and colouring, the skin defects must not exceed 6 cm square and the stalk can be damaged. The flesh must be free of defects. Up to 10% of the fruit can be below Class II standards and minimum standards provided the fruit is not rotting, badly bruised or unfit for human consumption.

Size grade should be coded.

Size Code	Grammes	Size Code	Grammes
4	781 -1220	14**	266 - 305
6	576 - 780	16*	236 - 265
8	461 - 575	18	211 - 235
10*	366 - 460	20	191 - 210
12**	306 - 365	22	171 - 190

The market's optimum fruit (key **) are 270 to 330 grammes (counts of 12 and 14) but fruit within the range 10 to 16 are acceptable (key *).

Packaging

Single layer, fibreboard box of around 4 kg net weight. The boxes are telescopic, folding and die-cut. Typical internal dimensions are 370 x 270 x 80/85 mm with good ventilation. New cartons are normally 40 x 30 10/12 cm.

Avocados

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address of packer or dispatcher,
- produce, Avocados and variety name,
- country of origin,
- commercial specifications, class, net weight, size in maximum and minimum weight, code number of size scale and number of fruits, if different from reference number.

It is strongly recommended that this information is included in the labelling, although it is not legally demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit i.e maximum 8 degrees C, minimum 5 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

FUERTE	HASS	AVOCADO	COUNT					
ETTINGER	BOOTH		7	8	9	10	11	
VARIETY			12	13	14	15	16	
CLASS I/II			4 Kg. Net.					
NAME OF EXPORTER		EXPORTER	PRODUCE OF COUNTRY				↑	
ADDRESS			STORE AT 12-13°C (54-56°F)					
FAX NUMBER								

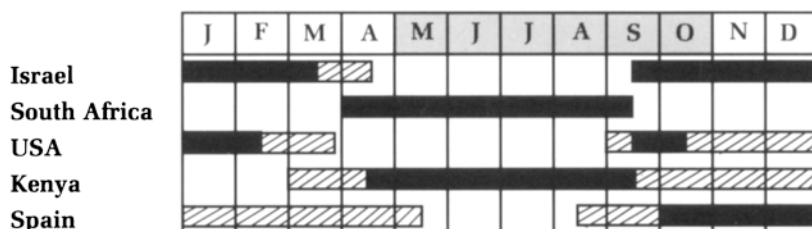
Post-harvest

Prior to packing keep in cool, ventilated, shady conditions. Fruit should not be washed but can be cleaned with a damp cloth. Cool within 24 hours of harvest. Mature unripe, cold-tolerant varieties can be stored at 5 degrees C. Most varieties need to be stored in the range 7 to 9 degrees C, but West Indian varieties need temperatures of 10 to 13 degrees C. Relative humidity should be 85 to 90%. Storage times vary according to variety and range between 2 and 5 weeks. The produce both gives off ethylene and is sensitive to the gas. Ripening occurs best at 15 to 25 degrees C. The fruit is ready for consumption when skin gives way to slight pressure. (See ISO International Standard No 2295, Avocados - Guide for Storage and Transport.)

Supply

Germany is the third largest import market in Europe with around 8% of total imports. Imports have risen from about 2,000 tons in 1980 to about 7,000 tons by the late 1980's. Israel is the dominant supplier with some 45% of the market, followed by South Africa, Kenya and the USA. The market takes about 700 tons per month from October to March, but supplies fall to about 400 tons per month from April until September.

Avocados



Price

Avocados have low to medium prices, with gross wholesale prices around DM 3 to 4 per kg. Prices are highest in the summer, and particularly in September and October (10 to 15 % above average), and lowest in January and February.

Transport

Product is mainly seafreighted in containers. Some product is airfreighted, particularly to obtain higher prices during the period between the two major suppliers' seasons.

Import tariffs

Rates in percentages ad valorem. Tariff number 0804 40100100 (December 1 to May 31) and 0804 4090010 (June 1 to November 30).

	Full	Israel	Maghreb	Turkey	ACP	GSP	LDDC
December 1 to May 31	4%	0.8%	0.8%	0%	0%	3.5%	0%
June 1 to November 30	8%	1.6%	1.6%	0%	0%	6%	0%

Successful Selling

The rapid market growth phase is now completed, and the main opportunities are to supply during the highest priced months from May to October. The market is highly competitive and well serviced by two well organised countries.

Lychees



Varieties: No specific varieties but the Mauritius (Tai So) cultivar is most commonly exported, and others include Maclean, Bengal and Brewster. Haak Yip is noted for its fine quality.

Appearance: Size 2.5 to 4 cm long, in oval and round shapes. Skin covered with tiny scales, cherry red to dull brown. The German market prefers red skinned fruit.

Internal characteristics: The shell must be easy to peel. The flesh should be firm, juicy, translucent and a white mother of pearl colour, slightly scented of roses. Key quality aspect is the fruit to stone ratio.

Production and harvesting

Fruit does not ripen after harvest and for air freighting should be harvested when fairly ripe. Unripe fruit has a longer shelf life and can be transported in a better condition, but suffers from lack of taste and aroma.

Grading

No specifications or standards available but the fruit must be sound and free from disease and graded to size, the acceptable size ranges being 25 to 40 mm. Fruit skin should be reddish in colour and not crinkled and brown. Larger lychees sell better than smaller ones.

Packaging

2 kg fibreboard cartons are generally used. The fruit is jumble packed and requires approximately 3 litres of internal volume per kg of fruit. Internal dimensions of 285 x 190 x 110 mm or 290 x 200 x 105 mm are generally

Lychees

used. This package normally contains about 150 to 200 fruits. There is some movement toward shipping in 250 gramme punnets with eight fruit each.

The labelling on each package must be clearly legible and visible, and should state:

- identification, name & address (or code) of packer or dispatcher,
- produce, Litchis - Lychees
- origin, country,
- net weight, net contents in kg.

It is strongly recommended that this information is included in the labelling. The following is useful information which will assist in marketing:

- 'this side up' symbol, temperature symbol with indication of correct storage temperature for fruit e.g. minimum 2 degrees C, maximum 4 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Post-harvest

Shelf life of between two and three weeks at 7 to 10 degrees C at 90-95% RH. Longer shelf life of 3 to 5 weeks can be obtained at 0 to 1.5 degrees C. The most important disorder is physiological browning when lychees lose their fresh red colour within a couple of days of harvest. Market value, but not eating quality, is significantly reduced. Control strategies include prompt pre-cooling either by hydro-cooling or forced air, fumigation with SO₂ and reduction of moisture loss by use of plastic film packaging.

Supply

Statistics are not available for this product, but the German market is estimated to be about 2,000 tons per year. The major suppliers are Madagascar, South Africa and Reunion. All three supply about 700 tons and market during the winter months - December through to March/April.



Lychees

There is a demand for further supplies throughout the year. In the months shaded in mid-grey there is a good market window and the months shaded in dark grey offer the optimum future market opportunities. (See key on page 16).

Price

Lychees are medium to high priced items with prices about DM 7.5 to 9 per kg in November and December. They normally fall in January to March to around DM 5.75 to 7.5 per kg. During the summer months when supplies are short prices are normally above DM 10 per kg.

Transport

Lychees are almost exclusively airfreighted. Development work is under way to make seafreighting possible. This work involves a combination of fungicide treatments, often using sulphur, and packing under plastic film to maintain moisture levels.

Import tariffs

Rates in percentages ad valorem. Tariff number 0810 90 30.

Full	Turkey	ACP	GSP	LDDC
7.5%	0%	0%	6%	0%

Successful Selling

There is a small but expanding demand for lychees. Additional supplies are acceptable throughout the year but the preferred market window is from March through to October. In the longer term some production is expected in Spain and Italy and there will be increased supplies from Israel during July and August. The very best supply periods are from March to June and from September to November. When lychees are available for every month of the year a further increase in the sales is expected as purchasing becomes habitual amongst consumers. However, when lychees become established prices will be lower. The market prospects for lychees, and for some other exotic fruit in Germany, have been damaged by retailers buying unusual produce at high prices and attempting to sell it over too long a period. Sales volumes can be increased by offering first class produce which is not kept too long on the shelf. Promotion and marketing will help sales but the real key to sales increase is the ability to offer fruit with good appearance, size and stone to fruit ratio.

Mangoes



Varieties:

Most popular varieties at present are Haden, Tommy Atkins, Keitt and Kent (Florida group), with a specialist demand for Alphonso (Indian group).

Appearance:

The fruit should have an oval shape and smooth skin: colour depends on variety. Preferred colour is reddish-yellow.



Internal

characteristics: The fruit has to be ripe with tender flesh, non-fibrous, yellow, an aromatic taste and quite strong scent.

Production and harvesting

Harvest at fully mature green stage. Indicators of correct harvesting stage vary between cultivars and locations. Characteristics used include fruit appearance, such as the shoulders' of the fruit raised above the hollow where the stem joins the fruit, a colour change from pale to dark green, 'cheeks' are full and well rounded and fruit stalk changes colour to yellow or brown and dry. Avoid harvesting in early morning to reduce latex staining problems. Cut fruit with secateurs. Leave stem of 1.5 cm which is trimmed back to 2 to 3 mm at packing.

Grading

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

- whole, intact and firm,
- sound: rotting & deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- free of marked bruising,

Mangoes

- free of damage caused by insects and/or other parasites,
- free of damage caused by low temperatures,
- free of abnormal external moisture,
- free of foreign smell or taste,
- sufficiently mature for the ripening process to be completed,
- the contents of each package should be uniform in terms of origin, variety, quality and size.

There are two classes, Class I and Class II.

According to new standards to be published shortly, weights and tolerances will be as follows:

The maximum permissible difference between fruit in the same package belonging to either size group A, B or C shall be 75, 100 and 125g respectively. The minimum weight of mangoes must not be less than 200g.

Tolerances in respect of quality and size shall be allowed in each package for produce not satisfying the requirements for the class indicated.

Class I: 10 per cent by number or weight of mangoes not satisfying the requirements of the class but meeting those of Class II or, exceptionally, coming within the tolerances of that class.

Class II: 10 per cent by number or weight of mangoes satisfying neither the requirements of the class nor the minimum requirements, with the exception of fruit affected by rotting, marked bruising or any other deterioration rendering it unfit for consumption.

For all classes: 10 per cent by number or weight of mangoes conforming to half of the permissible difference of the related size group above or below the range specified on the package with a minimum of 180g for those packed in the smallest size range and a maximum of 925g for those in the largest size range.

Mangoes should be graded to size and coded.

Size Code	Grammes
A	200 - 350
B **	351 - 550
C	551 - 800

For the German market the most saleable weights are 300-550 grammes per fruit. Importers prefer fruit to be graded by maturity.

Packaging

Net weight per box 4.5 kg (+ or - 500g). Fruit wrapped individually in tissue in only one layer. Numbers per box are between 6 and 14, but preferred sizes are 9, 10 and 12. There are numerous different box sizes. Internal volume for 5 kg of fruit without inserts, 8.5 to 9.5 litres, whilst a cell pack requires 11 to 13 litres per 5 kg of fruit. New carton sizes are expected to be 40 x 30 x 10/12 cm.

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Mangoes - Mangues and variety name,
- country of origin,
- commercial specifications, class, size in maximum and minimum weight or the size code number set out above, number of fruit, net weight in kg.

It is strongly recommended that this information is included in the labelling, although it is not legally demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 12 degrees C, maximum 14 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Post-harvest

Cool as quickly as possible, preferably within 24 hours of harvest. For most commercial varieties storage temperatures should be 12 to 14 degrees C, with 85 to 90% RH. Storage time of 2 to 3 weeks is possible. Fruit can be ripened by importer using a warm room at 20 to 25 degrees C. Anthracnose is the most important post-harvest problem. Control involves a regular field spray programme from flowering until a few weeks before harvesting. In addition a hot water post-harvest treatment is used, comprising hot water at 55 degrees C containing a fungicide for 5 minutes (see ISO standard ISO 6660, Mangoes - Guide to Storage).

Supply

The volume of imports has expanded from less than 1,000 tons at the start of the 1980's to 1,750 tons in 1985 and over 5,000 tons by 1989. The German market is the fourth largest in the EC with around 15% of total imports and is regularly over supplied.

Mangoes



The peak supply months are April and May when some 650 tons per month are imported. From June to September monthly imports stand at about 450 tons. October - November is a period of low supplies, with imports amounting to about 300 tons per month. There is a peak in December for the Christmas market of about 500 tonnes, and then imports fall back to about 400 tons per month in January and February.

Price

A medium priced product with gross wholesale prices typically in the range of DM 4 to 5 per kg, with prices about 10% below the annual average in the summer months.

Transport

Mangoes are mainly transported by air but are increasingly being seafreighted. This is achieved by using controlled atmosphere containers or reefer containers coupled with excellent in-field and post-harvest chemical control methods. Using such methods, a maximum shelf life of 4 weeks from harvesting to marketing has been achieved.

Import tariffs

Rates in percentages ad valorem. Tariff number 0804 500091.

Full	Israel	Turkey	ACP	GSP	LCCD
4%	0%	0%	0%	0%	0%

Successful Selling

Mangoes appear on the German market but the relatively high price is a limiting factor. New exporters should treat the market with caution as it is often oversupplied. Optimum marketing period is from November to April. In the longer term it is expected that mangoes will increasingly be seafreighted and prices will fall. The long term future opportunities are for exporters who can supply high quality and well coloured mangoes during the winter months by sea.

Pawpaw



Varieties: The German market is only interested in the smaller, tastier fruits of the solo types such as Solo, Solo Sunrise, Solo Sunset and Red Amazon.

Appearance: Skin colour green turning yellow. There is a stronger demand for yellow and orange colour. Small brown marks do not impair quality.



Internal characteristics: Flesh should be 2.5 to 5 cm thick, butter soft, pale yellow to orange in colour. Consumer prefers sweeter fruit types with reddish flesh. Ideally sugar percentages should be above 10% brix - normally about 12% and certainly not below 8%.

Production and harvesting

Fruit must be harvested after the first signs of colouring (normally 5 to 10% colour) at the blossom end if it is subsequently to ripen. Some growers estimate readiness for harvesting by making a pin-prick on a typical fruit and observing sap flow. Fruit is best cut from the tree using a knife. Alternatively give a sharp twist but trim the stem to 0.5 to 1 cm length with a clean cut. High fruit can best be harvested by combining the use of a knife on a pole with a catching net. Harvesting rates of about 450 kg per day per picker should be achieved. The fruit is extremely delicate and must be handled with great care. Field crates should be lined with sponge.

Grading

There are no national or international standards for pawpaw. Grade to size typically into counts of 8, 10 and 12, into 3.5 to 4 kg net weights. A similar ripeness grading system to that used for

Pawpaw

pineapples can be used for pawpaw. Fruit should be graded to size and maturity. The maturity grades are:

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

Packaging

Fruits are packed in a single layer with a protective layer of paper wool, wood wool or similar materials in the base of the carton. The fruits are often individually wrapped in tissue paper and laid diagonally in the box. 4 kg of pawpaws require 11 to 12.5 litres of internal space. The Brazilian export fibreboard box has external dimensions of 31 x 41 x 11 cm. New size specifications are 30 x 40 x 10/12 cm.

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address of packer or dispatcher,
- produce, Papayas - Pawpaws,
- country of origin,
- commercial specifications, number of fruit in the package, net weight in kg.

It is strongly recommended that this information is included in the labelling, although it is not legally demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 7 to 10 degrees C, maximum 9 to 12 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Post-harvest

Extreme care in post-harvest handling is critical as many post harvest fungus diseases are the result of attack on damaged tissue. The fruit can be washed for 1 to 2 minutes in a mild bleach at 0.1% and allowed to dry. The optimum

Pawpaw

storage temperature is generally given as 7 degrees C for ripe fruit and 10 to 12 degrees C for green fruit with 85-95% RH. Shelf life of 2 to 3 weeks is normally possible. Major post-harvest problems are anthracnose and black rot. Both diseases can be controlled by a carefully timed orchard spray programme coupled with post-harvest treatment. Mild infections can generally be controlled by a suitable fungicide in the washing water. More serious infections will require a hot water treatment, often combined with a fungicide, at 47 degrees C for 20 minutes. In addition, fungicidal wax applications can assist with anthracnose control.

Supply

Imports of pawpaw have risen from 100 tons in 1979 to 1,700 tons in 1989, making Germany the largest import market in Europe with about 20% of total European imports. Although the figures suggest a strong expansion in market size, the trade believes that import volumes exceed demand and that there are high levels of unsold fruit.

	J	F	M	A	M	J	J	A	S	O	N	D
Brazil												
Costa Rica												

The market is supplied all the year round by Brazil, which has a 55% share of the market. Brazil's peak supply months are from October to April when the monthly export figures are around a third higher than during the summer months. Costa Rica has been increasing its supply to the German market. Approximately 150 tons per month are imported.

Price

A medium priced fruit with typical gross wholesale prices in the range DM 4.50 to 5.50 per kg for airfreighted produce and DM 2.50 to 3.50 per kg for seafreighted fruit. Prices are about 5% higher than average in the winter months, and 5% lower during the mid-summer months.

Transport

Most shipments are made by air. Efforts are being made to use sea freight, but sea shipment will only be possible if excellent post-harvest handling methods are used. In general, sea shipment makes it impossible to move fruit from harvest to market within the 15 days recommended limit.

Import tariffs

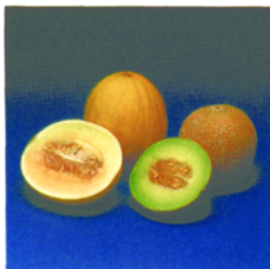
Rates in percentages ad valorem. Tariff number 0807 20 00.

Full	Turkey	ACP	GSP	LCCD
2%	0%	0%	0%	0%

Successful Selling

There is a small demand in Germany for papaya and there is a danger of oversupply. New exporters should treat the market with caution. The German market is relatively low priced and European prices in general are in long term decline. Future suppliers should access the market either by supplying superior quality fruit, specifically yellow skinned and orange/pink fleshed, or by successfully shipping by sea. Sea shipment times must not exceed 14 days.

Sweet Melons



Varieties:

In the winter melon group the Yellow Honeydew types - honey melon, or yellow honey melon - are popular but not the White Honeydews or the green Tendril types. In the net melon group Galia is the most popular in Germany. Amongst the cantaloupe group there is a small but increasing demand for the Charentais variety. Ogen melons are becoming less popular.

Appearance:

Honeydew melons are typically oval in shape and should be yellow in colour with longitudinal grooves in the skin but there should be no ribs.

Galia melons have a greenish yellow colour, with a net pattern on the skin.

Charentais has a light green to cream coloured skin.

Internal characteristics:

Honeydew melons have a light green to yellow flesh and are juicy.

Galia has light green flesh with an excellent aroma and taste. Minimum sugar content of about 10% brix.

Charentais has orange flesh which is very juicy and has an excellent flavour.

Sweet Melons

Production and harvesting

Harvesting should take place at night under lights, or in the early morning. Optimum harvesting is often based on sugar content of the pulp and is dependent on variety and shipping time. Net and cantaloupe types are best harvested at 'full slip', when the fruit stalk is ready to separate naturally from the vine. The fruit then has the potential to develop its full flavour. For more distant markets harvesting often occurs at 'half slip', or when the stem-crack is still forming. At this stage of ripening the fruit will still develop an acceptable flavour. It is more difficult to judge the correct harvesting time of honeydew types. Often a change in colour of the ground spot is used. Sometimes ethylene is applied to honeydew melons to trigger ripening and to ensure uniformity. Melons are very sensitive to damage and must be handled with great care. Because of their short shelf life they are often harvested too early.

Grading

Standards aim to define quality at export (see UN/ECE FFV-23 and OECD: No 38). The adherence to these standards is under the supervision of the Bundesamt für Ernährung und Forstwirtschaft in Frankfurt. The minimum requirements are that the fruit must be :

- whole, intact and firm,
- sound: rotting and deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- sufficiently developed and ripe,
- of typical shape and colouring of the variety, a pale rind being allowed where the fruit touched the ground,
- fresh in appearance,
- free of abnormal external moisture,
- free of foreign smell or taste,
- able to withstand transport and handling,
- able to arrive in satisfactory condition,
- each crate/box to be uniform and contain melons of the same origin, variety, commercial grade, size, shape, colour and state of development.

There are two classes, Class I and Class II.

Class I melons must be of good quality. The fruit must be well developed and free of cracks and bruises, although slight cracks of less than 2 cm in length around the peduncle which do not reach the pulp are not considered a defect. If present, the peduncle must not exceed 3 cm. The fruit must be sized by either weight or diameter. The heaviest melon must 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 I

Sweet Melons

standards, and none can fall below Class II standards.

Class II melons must satisfy the minimum requirements. Provided that they retain their essential characteristics with regard to quality, shelf life and presentation, slight defects are allowed. Acceptable slight defects include shape, discolouration of the rind and pulp, and surface bruises and cracks. No more than 10% of fruit, by number or weight, can be below Class II standards or the minimum requirements, and all fruit must be fit for human consumption.

The German market requires Yellow Honeydews to be packed 8, 9 10 or 12 for a 10 kg box. Galia melons should be in counts of 4, 5, 6, 8 and 9 in a 5 kg box. Charentais should be in counts of 8, 10 and 12 for a 5 kg box.

Packaging

Honeydew melons are mostly sold in 10 kg units, while other varieties are sold in smaller units, normally 5 kg net. Approximately 2.5 litres of internal volume is required per kg of melons.

Melons normally have to be packed with filling materials or in compartmented trays to prevent fruit-to-fruit damage. Wood wool, glassine wool or tissue paper is normally used. Expanded plastic nets can also be used.

Honeydew melons are generally packed on their sides, whereas other melons are packed on their base.

The labelling on each package must be clearly legible and visible and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Melone - Melons and type or variety name,
- country of origin,
- commercial specifications, class, size (when sized) by either weight or diameter, weight or number of fruits.

It is strongly recommended that this information is included in the labelling, although it is not legally demanded by the EC. The following is useful information to assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 2 degrees C, maximum 10 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

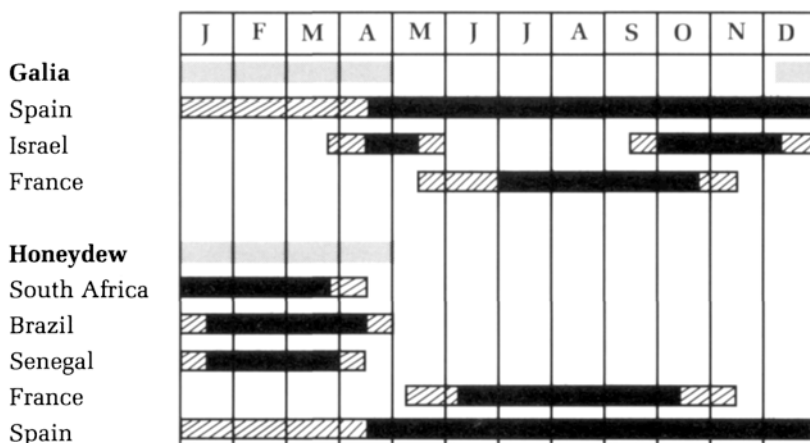
Sweet Melons

Post-harvest

Rapid cooling is strongly recommended to maintain sugar levels. Ideally Galia melons should start cooling within 2 hours of harvest at 2 degrees C. Optimum storage is 2 to 4 degrees C at 95% RH. The shelf life can be up to 2 weeks. Waxes incorporating fungicides can also be used. The temperature can be slowly increased to 25 degrees C to ripen. Condensation should be dried off. Honeydew melons can be stored at between 7 and 10 degrees C 95% RH for a maximum of one month. Melons are ethylene gas producers.

Supply

The tonnage of imported sweet melons has risen from less than 20,000 tons in the early 1980's to over 30,000 tons by the end of the decade. The fruit is available all the year round but is mainly supplied in the summer. The peak import months are July and August when some 6,000 tons a month are imported. Imports stand at about one tenth of this figure during the first four months of the year. Sales of Yellow Honeydew melons are estimated to be twice those for Ogen and Galia melons.



The major exporters to the German market are Spain (50%), Israel (10%), Turkey, France and Italy (all about 7%). South Africa, Brazil and Senegal are the main extra-regional suppliers with between 2 and 4% of the import market.

During the summer months Honeydew melons are supplied from France and Spain, while in the winter they are seafreighted from Brazil, South Africa and Senegal.

Sweet Melons

Ogen and Galia melons are supplied in the summer months from Spain, France and Israel. Israel also supplies up until about mid-December.

Charentais is supplied by France in the summer, and small volumes are airfreighted from Senegal in the winter.

Price

Gross wholesale prices for Yellow Honeydews are around DM 1.3 to 1.6 per kg during the January to March period. Galia melon wholesale prices are approximately DM 3.75 to 4.5 per kg. Charentais should sell for around DM 3.5 to 4.5 per kg.

Transport

Honeydew melons are seafreighted. Other cultivars are mainly airfreighted, but rarely command prices to justify airfreighting. Trial shipments in controlled atmosphere containers from Costa Rica are under way and seem promising.

Import tariffs

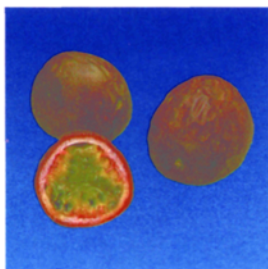
Rates in percentages ad valorem. Tariff number 0807 10 90.

	Full	Israel	Turkey	ACP	GSP	LCCD
June 1 to October 31	11%	11%	11%	0%	11%	0%
November 1 to May 31	11%	5.5%	0%	0%	11%	0%

Successful Selling

The largest market is for Yellow Honeydew melons. Export opportunities are for winter supplies (January to April) by sea to compete with Brazilian supplies. There has been some dissatisfaction with existing suppliers because of variability in quality and taste. New suppliers can create a market for themselves by maintaining the highest standards. Winter supplies of Galia are also of interest from the start of December, provided that airfreight rates are highly competitive. Rapid seafreight is possible.

Passionfruit



Varieties:

Purple skinned passion fruit (*Passiflora edulis*) and Granadilla (*Passiflora ligularis*) are most popular. The yellow or golden skinned passion fruit (*Passiflora edulis f. flavicarpa*), commonly called Maracuya, is not acceptable because it is often considered too sour.

Appearance:

The purple passion fruit should have dark purple skin. Some light wrinkling is acceptable. Granadilla has a strong golden/orange colour with a hard shell. It is larger than the other two types, having diameter of about 70 to 80 mm. Maracuja has yellow, smoother, shiny skin.

Internal

characteristics: The purple passion fruit has a lemon yellow coloured pulp with brown seeds turning to black. The pulp has a sweet/sour flavour with a strong and characteristic aroma. Granadilla has a white/grey pulp and a sweeter flavour. Maracuya has a sharper flavour than the purple passion fruit.

Production and harvesting

The purple passion fruit are picked when colour is showing on the fruit. When the fruit is ready for harvest the fruit stalk separates easily from the vine. Skin damage can be reduced by picking into a fibreboard carton in picking bags.

Grading

There are no international standards for passion fruit. Fruits should be fresh and the fruit in each package should be uniform in terms of origin, size, colour and ripeness. Exporters should be

Passionfruit

aware that some European importers of purple passion fruit specify maximum and minimum weights of individual fruits of 30 grammes and 45 grammes respectively, with 40 to 48 fruits per 1.7 to 2 kg carton. Size grades can be 45 to 50 mm in diameter.

Packaging

Fibreboard cartons, 1.7 to 2 kg net weight with an internal volume of around 6 litres. The fruit is generally packed in two layers separated by a sheet of paper. Jumble packing is also accepted. One layer cell packed cartons are also used.

Granadilla often comes in 3.5 kg trays.

The labelling on each package must be clearly legible and visible, and should state:

- identification, name & address (or code) of packer or dispatcher,
- produce, Passionfrucht - Passion Fruits,
- country of origin,
- net weight, net contents in kg and the count when arranged in layers.

It is strongly recommended that this information is included in the labelling. The following is useful information which will assist in marketing:

- 'this side up' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 7 to 12 degrees C, maximum 9 to 14 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Post-harvest

Store for 3 to 5 weeks at 7 to 10 degrees C at 85-95% RH. Passion fruit has a very high output of ethylene gas, and therefore can affect sensitive fruit such as avocados.

Supply

There are no statistics on market size. The market is probably no more than a few hundred tons per annum. Supplies are dominated by Kenya and Colombia. There is some suggestion that there is a shortage of purple passion fruit from November to February.

Passionfruit

Price

Purple passion fruit is a relatively high priced product with gross wholesale prices around DM 7 per kg in the summer, rising to around DM 10 per kg in the winter. Granadilla obtains wholesale prices of DM 7 to 8 per kg.

Transport

Passion fruit is mainly transported by air. Although seafreighting is often possible in a practical sense, the size of demand cannot warrant the volumes involved in seafreighting, even for a single 20 foot container.

Import tariffs

Rates in percentages ad valorem. Tariff number 0810 908020.

Full	Turkey	Cyprus	ACP	GSP	LCCD
11%	0%	7%	0%	6%	0%

Successful Selling

There is a small market in Germany, which is probably the fourth or fifth largest market in Europe, with a total demand of less than 1,000 tons. There is some evidence that demand has been restricted by sales of poor quality product at the end of its shelf life. Some importers prefer the Colombian Granadilla due to its superior size and taste, while others want the purple skinned passionfruit. Some possibilities exist for sale of purple passionfruit to German importers for onward sale into the Scandinavian market.

Persimmon



Varieties: Only non-astringent varieties are marketed, but there is an increasing demand for the Sharon variety in particular.

Appearance: Smooth shiny reddish orange skin.

Internal characteristics: Orange flesh with few or no seeds. Smooth pulp turns sweet when fully ripe with a mild vanilla-like aroma. Main varieties become soft when ripe; Sharon fruit remains firm.

Production and harvesting

Harvest when hard ripe and according to skin colour and sugar.

Grading

There are no international standards.

At marketing the fruit should be firm, ripe and ready to eat. It should have its characteristic flavour. The fruit should be of a uniform size in each carton and be free from pests, diseases, damage or contamination. Colour should be bright orange and without a green tinge. The calyx should be fresh and without excessive browning, and the skin should be free from marking or browning.

Grade to uniform size, counts of 15 to 18 per box with individual weights 154 to 180 grammes or 127 to 154 grammes respectively.

Packaging

Fibreboard single layer carton.

The labelling on each package must be clearly legible and visible, and should state:

Persimmon

- identification, name & address of packer or dispatcher,
- produce, Kaki - Persimmon,
- country of origin,
- commercial specifications, count and weight grade.

It is strongly recommended that this information is included in the labelling. The following is useful information which will assist in marketing:

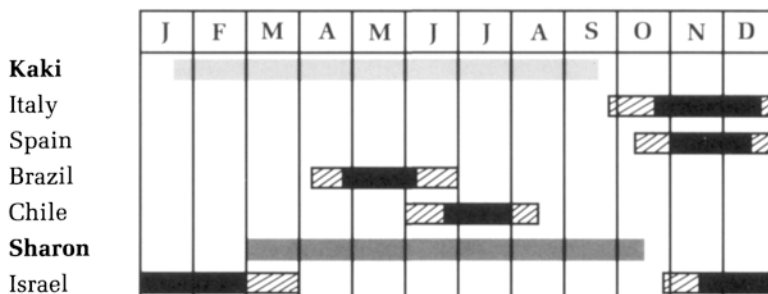
- 'this side up' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 0 degrees C, maximum 2 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Post-harvest

Storage can extend to 3 to 4 months at 0 degrees C, relative humidity 90%. Sharon fruit should be stored at 2 degrees C. When ripe, product can be held for 14 days at 0 to 3 degrees C, 95% relative humidity.

Supply

The main supply of Kaki and Persimmon is from Italy in October to December, and of Sharon fruit from Israel from September to March. Some supplies of Persimmon Kaki types come from the Southern Hemisphere, particularly Brazil, in April, May and June.



Price

In the main season Kaki obtains prices of DM 2 to 4 per kg, while Sharon fruit prices are in the region of DM 4 to 6 per kg. Off-season Kaki obtains prices of DM 4 to 6 per kg from Brazil and DM 7 to 10 per kg from Chile.

Transport

Seafreighted under refrigeration.

Import tariffs

Rates in percentages ad valorem.

	Full	Israel	Cyprus	ACP	GSP	LCCD
December 1 to July 31	11%	4.9%	7%	0%	6%	0%
August 1 to November 30	11%	11%	11%	0%	6%	0%

Successful Selling

The trade considers the prospects for Sharon fruit in particular are good. Israel is expected to carry out extensive promotion as its production builds up to create a demand for this product. This in turn will generate opportunities for potential off-season suppliers in much the same way that the Israeli promotion campaign for avocados created market opportunities for Southern Hemisphere avocado suppliers. New suppliers should have access to refrigerated seafreight and be able to supply product during the April to October market window. Exporters of Sharon fruit should aim to match Israeli quality standards and specifications. Market opportunities also exist for non-astringent persimmon or Kaki from January to September.

Pineapples



Varieties: Major variety is Smooth Cayenne, with some sales of Red Spanish and Queen or Victoria.

Appearance: Reddish yellow skin with crown between one third and two thirds the height of the fruit. The market prefers strong coloured fruit with colour of 50% and over at marketing (M2 to M3). Green fruit is not acceptable.

Internal characteristics: A yellow to pale yellow flesh with a brix 12% to 14%.

Production and harvesting

Fruit production is programmed by means of hormone treatments to ensure continuity of supply. The fruit is normally treated with ethylene prior to harvest to ensure good coloration. For air freight, harvest when fruit is coloured up to half its height (M2), and for sea freight, harvest when fruit is turning orange/yellow at base (M1). Fruit should be harvested with the stalk trimmed to about 20-30 mm and dipped into a fungicide solution (usually 500ppm Benomyl or Thiabendazole) immediately before packing to control watery heart or black rot.

Grading

There are no international OECD or UN/ECE standards for pineapples. However, by convention Ivory Coast grading standards are applied. The German market takes fruit graded by weight according to the following codes:

Pineapples

Size Code	Size Specification	
A	1.5 kg and over	(best airfreighted)
B	1.1 to 1.5 kg	(best seafreighted)
C	0.8 to 1.1 kg	(seafreight)
D	less than 0.8 kg	
Baby	about 0.55 kg	

Fruit is harvested according to stage of maturity.

Maturity Grade	Description
M1	fruit on the turn
M2	half ripe fruit
M3	ripe fruit

M1 fruit is used for seafreighting, while M2 fruit is airfreighted.

Packaging

Pineapples are normally packed with 6 fruits for size A, 12 for sizes B and C, and 20 for size D. Seafreighted produce is being increasingly shipped horizontally.

The labelling on each package must be clearly legible and visible, and should state:

- identification, name & address (or code) of packer or dispatcher,
- produce, Ananas - Pineapple,
- country of origin,
- commercial specification, size of fruit according to letter code and number of fruit.

It is strongly recommended that this information is included in the labelling. The following is useful information which will assist in marketing:

- 'this side up' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 10 degrees C, maximum 13 degrees C,
- maturity stage at packing,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Pineapples

Post-harvest

For sea freight, field heat must be removed as rapidly as possible and dropped to 10 to 13 degrees C. Pineapples can be stored for three weeks at 90 to 95% relative humidity. Ripe fruit should be held at a lower temperature of 6 to 7 degrees C, and can be held for up to two weeks. Below 5 degrees C chilling injury of black spots can occur.

Supply

Germany is the second largest market in Europe for pineapples. Imports rose from 12,500 tons in 1980 to around 36,000 tons by 1986 and have since remained static. The fruit is imported all the year round, but monthly totals are lower from July to September and peak at Easter and at Christmas. The major change has been the decline of the Ivory Coast's market share from about 85% to 50% by 1989. Costa Rica and Honduras have expanded their supply.

	J	F	M	A	M	J	J	A	S	O	N	D
Ivory Coast												
Honduras												
Costa Rica												

Price

Seafreighted produce obtains low gross wholesale prices of around DM 1.25 to 1.75 per kg. Airfreighted pineapples obtain prices around 70% higher, but still relatively low for airfreighted produce - DM 2.75 to 3.25 per kg.

Transport

Mainly shipped by refrigerated vessels. Higher quality is achieved in reefer containers. For seafreighting, time from harvest to marketing should not exceed 21 days. Top quality pineapples can be airfreighted if air freight rates are competitive.

Import tariffs

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

Pineapples

Full	ACP	GSP	LDDC
9%	0%	9%	0%

Successful Selling

Pineapples are among the few exotic fruits for which a demand is expected to develop in Eastern Germany in the short to medium term. The market size is likely to expand, particularly for the seafreighted product. The Ivory Coast as a supplier is in decline and is criticised because of variable quality. The new supplies from the Caribbean and Central America have a weakness in product colour.

Seafreighted fruit constitutes the bulk of the business and comprises mainly B size fruit with some A's and C's. There are opportunities for new suppliers of seafreighted pineapples with good coloration and a competitive price.

The market for airfreighted fruit is much smaller. The airfreighted fruit tends to be mainly A size and demand is higher in the summer period when there is less Ivory Coast fruit available. The market has reacted positively to airfreighted Ghanaian produce marketed as 'ripe harvest' fruit. Airfreighted produce can only compete if cargo rates are low (below \$ 1.00 per kg) and excellent and consistent quality is maintained.

Strawberries



Varieties:

Main varieties grown in tropical regions are short day varieties or day-neutral types. Examples are Parker, Chandler, Pajaro, Fern, Princelle, Oso Grande and Selva. Other varieties imported from outside Europe include Tufts, Fresno, Tioga, Hecker, Douglas and Brighton.

There is a small and specialised demand for the wild strawberry. The Wood Strawberry is the best known variety.

Appearance:

Calyx and short fresh stalk attached. Fruit should be of a bright red colour.

Internal

characteristics: Flesh red to pink, and sweet.

Production and harvesting

Under tropical conditions strawberries are normally grown on annually imported cold-stored runners. The use of mulches and trickle irrigation helps to restrict grey mould and anthracnose respectively. The fruit is often selected for residue analysis to detect the presence of fungicides. Pluck fruit by holding the stem between the thumb, fore and middle finger. Colour stage at harvest is dependent on length of shipment. Fruit will colour after harvest, but the taste will not improve. Extreme care in handling is required. Fruit is often picked into a one layer field box with a sponge floor, and taken to field or central packhouse for packing into punnets.

Grading

EC grading standards apply (see Strawberries VO (EC) Nr 899/87 of March 30, 1987). The minimum requirements are that the strawberries must be:

Strawberries

- whole, intact, undamaged,
- sound: rotting and deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- with the calyx and a short green unwithered stalk attached,
- free of damage caused by pests and disease,
- fresh but not washed,
- free of abnormal external moisture,
- free of foreign smell or taste,
- carefully picked and fully developed, and with a state of ripeness and colouring that will withstand transport and handling so that they arrive in a satisfactory condition,
- each package must be uniform and contain only fruit of the same origin, variety and quality.

There are three classes, 'Extra' class, Class I and Class II (which should not be exported).

The 'Extra' class strawberries must be of superior quality and typical in shape and colouring of the variety. The fruit must be particularly uniform and regular with respect to ripeness, colouring and size. In addition the fruit must be bright in appearance and free of earth.

Size, measured as the diameter across the equatorial section, must be above 25 mm. Tolerances in terms of quality are that no more than 5% of fruit should fall short of 'Extra' class quality standards and not below Class I standards. Spoilage cannot exceed 2%. A maximum of 10% can be below the minimum size specifications.

Class I strawberries must be of good quality. They may be slightly less uniform in size, shape and appearance than 'Extra' quality. They are allowed a small white colour patch but must be practically free of earth. Minimum size is 22 mm in diameter (except for Princelle variety). Up to 10% of the fruit can be below Class I standards and minimum standards, provided that the fruit is not rotting, badly bruised or unfit for human consumption. Spoilage cannot exceed 2%. A maximum of 10% can be below the minimum size specifications.

Fruit should be graded according to size and degree of ripeness. Normally between 10 and 12 fruits are packed into a 250 gramme punnet, but to make up for weight loss in transport aim to pack 270 grammes per punnet.

No minimum sizes are specified for wild strawberries and the uniformity requirements are less strict.

Strawberries

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Erdbeere - Strawberries (variety in the case of Princelle),
- country of origin,
- commercial specifications, class, number of punnets and weight.

This information is demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 0 degrees C, maximum 12 degrees C,
- date of packing, often in code,
- variety name,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Packing is generally into plastic or papier-mache punnets with some movement towards the use of transparent lidded plastic types. Punnets are 250 grammes each and there are normally 10 or 12 punnets per tray. In the German market there is a reaction against non-biodegradable packaging materials such as PUVC's. Polysterol and fibreboard are preferred.

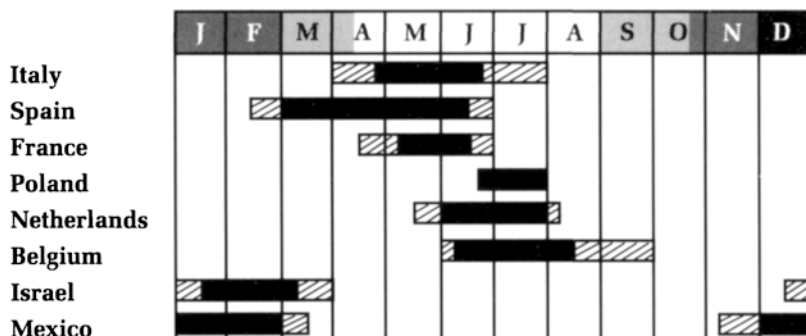
Post-harvest

Pre-cooling should be achieved within two to four hours of harvesting. Storage should be at 0 degree to 1 degree centigrade, 85-95% relative humidity, to give a shelf life of a few days and possibly up to two weeks. Pulp temperatures on arrival should be in the 2 to 12 degrees C range.

Supply

Germany imports over 100,000 tons of strawberries per annum and grows a further 50,000 tons itself. The volume of imports has doubled during the 1980's.

Strawberries



Price

Strawberries are a high priced item with gross wholesale prices of around DM 9 to 10 per kg during the months of October, November, January and February. In December, prices tend to rise to about DM 11 to 13 per kg. By March, prices fall to around DM 6 per kg.

Transport

Exclusively transported by air and requires fast customs clearance and the maintenance of a cool-chain.

Import tariffs

Rates in percentages ad valorem. Tariff number 0810 10 10 and 10 90.

	Full	ACP	GSP	LDDC
May 1 to July 31	16%	16%	16%	16%
August 1 to April 30	16%	16%	10%	16%

Successful Selling

Germany is a large market with a good and expanding off-season demand. In addition, there is good growth potential in Eastern Germany. Currently less than 4% of total imports arrive in the period from September to the end of February. The optimum import season is from mid-November to mid-February, but within this period December is a good month while January is slack. Exporters are recommended always to pre-alert importers and clearance agents of shipments.

Peaches and Nectarines



Varieties: There are numerous main season varieties including, among peaches, Amsden, Cardinal, Coronet, Dixie Red, O'Henry, Junegold and Redhaven and ,among nectarines, Le Grand, E.S. Grand, Late Le Grand, Sun Grand, Early Le Grand, Regal Grand, September Grand, Armking, Independence and Nectared 4.

Appearance: Yellow blushed with red. Nectarines are smooth skinned and more vividly coloured, whereas peaches are covered with a slightly furry down.

Internal characteristics: Flesh colours range from white to yellow. Yellow juicy aromatic varieties with free stones are preferred by German consumers.

Production and harvesting:

Harvest by holding fruit in the palm of the hand to reduce damage. If harvesting at the hard green stage fruit will not ripen fully and achieve its typical aroma. Tree-ripened fruits must have rapid transport times.

Grading

EC grading standards apply for peaches and nectarines (see Peaches VO (EC) Nr 3596/90 of December 12, 1990). The minimum requirements are that the peaches or nectarines must be:

- whole, intact,
- sound: rotting & deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- free of abnormal external moisture,

Peaches and Nectarines

- free of foreign smell or taste,
- 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 a satisfactory condition,
- each package must be uniform and contain only fruit of the same origin, variety, quality, degree of ripeness and size.

There are three classes, 'Extra' class, Class I and Class II, which is not recommended for export.

The 'Extra' class peaches and nectarines must be of superior quality. The fruit must be typical of the variety in terms of shape, development and colouring, allowing for some differences according to the district in which they are grown. They must have no defects and the fruit in each package must be uniform in colour. 'Extra' class fruits must be above 56 mm in diameter or 17.5 cm in circumference. Tolerances in terms of quality are that no more than 5% of fruit should fall short of 'Extra' class quality standards and then not below Class I standards. A maximum of 10% can be up to 3 mm more or less than the diameter size stated on the case (or 1 cm when circumference is used).

Class I peaches and nectarines must be of good quality. They must have the characteristics typical of the variety, allowing for differences in the location grown. Slight defects are allowed in shape, development or colouring. The flesh must be undamaged, and splits where the stem joins are not allowed. 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 I standard, but must be within the quality standards of Class II. Size tolerances are the same as those for 'Extra' class.

Class II peaches and nectarines must satisfy the minimum requirements. The flesh should not show any serious defects. Splits where the stem joins the fruit are only acceptable if they are within the quality tolerances. Skin defects are allowed provided that the fruit retains its essential characteristics for quality, shelf life and presentation. These defects must not exceed:

- 2 cm in length for defects of an elongated shape,
- 1.5 cm square in total area.

Peaches and Nectarines

Up to 10% of the fruit can be below Class II standard and the minimum requirements, provided that it is fit for consumption. Size tolerances are the same as those for 'Extra' class.

Peaches and nectarines must be graded to size. There are eight different size classes.

Size Code	Diameter	Circumference
AAAA	90 mm & over	28 cm & over
AAA*	80-90 mm	25-28 cm
AA**	73-80 mm	23-25 cm
A**	67-73 mm	21-23 cm
B**	61-67 mm	19-21 cm
C*	56-61 mm	17.5-19 cm
D	51-56 mm	16-17.5 cm

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Pfirsiche - Peaches or Nektarinen - Nectarines and name of variety for classes 'Extra' and I,
- country of origin,
- commercial specifications, class, size according to coding or as maximum and minimum diameters or circumference.

This information is demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 0 degrees C, maximum 4 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

'Extra' class must be packed in a single layer carton with thermoformed PVC trays to ensure fruits are kept from inflicting fruit-to-fruit damage or in 0.5 or 1 kg punnets.

Peaches and Nectarines

Class I can be packed in two layers or four layers when fruit is placed in rigid pockets.

Typical packing is 8 to 9 kg of fruit in a plastic tray-pack or panatpack system. The contents range from 42 to 72 fruits.

Post-harvest

Only short term storage is possible. Pre-cooling helps to restrict post-harvest diseases, as does careful post-harvest handling. Major diseases are blue mould rot, brown rot, grey mould rot and rhizopus rot. Storage times at -1 to 0 degrees C, 90% humidity, are two to four weeks for peaches and two to six weeks for nectarines.

Supply

Imports have risen from about 200,000 tons at the start of the 1980's to nearly 300,000 tons by the end of the decade. The major suppliers are Italy and Greece. The major off-season suppliers are Chile and South Africa.



Currently the split between peaches and nectarines is about 50:50, but nectarines have a wider availability in the January to March period.

Price

Average prices for nectarines are about 25% above the average price for peaches. The off-season prices for nectarines tend to be in the range of DM 6 to 9 per kg.

Transport

Off-season supplies are mainly imported by air from the Southern Hemisphere. Some varieties of nectarine and peach are sufficiently robust for seafreighting in containers.

Peaches and Nectarines

Import tariffs

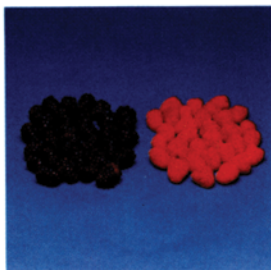
Rates in percentages ad valorem. Tariff number 0809 30 00.

	Full	Turkey	ACP	GSP	LDDC
December 1 to December 31	22%	0%	9.7%	22%	22%
January 1 to February 28	22%	0%	7.3%	22%	22%
March 1 to March 31	22%	0%	7.3%	22%	22%
April 1 to November 30	22%	0%	7.3%	22%	22%

Successful Selling

Less than 1% of imports occur during the October to April period. Opportunities for off-season supply are excellent, and there is also good growth potential in Eastern Germany. Demand is stronger and prices higher for nectarines. If an exporter aims to supply airfreighted fruit he should promote the product as 'tree ripened' and possessing the best quality taste and appearance.

Raspberries and Blackberries



Varieties: Raspberry varieties include Glen Moy, Glen Prosen, Malling Promise, Meeker, Willamette, Rode Radboud and Autumn Bliss. Blackberry varieties are Bedford Giant, Himalaya, Oregon Thornless and Cut-leaf.

Appearance: Raspberries have plum red coloured drupelets. Blackberries have black drupelets.

Internal characteristics: Juicy and sweet.

Production and harvesting

Both cane fruits require a cool period during the year, but there is some evidence that this can be partially substituted by chemical treatment. Fruit is picked with thumb, fore and middle finger using gentle pressure. Pick directly into punnets. Under warm conditions the fruit requires daily picking.

Grading

German national grading standards apply to raspberries *Rubus indeans* and blackberries *Rubus fruticosus* (leaflet Part 1 103 October 20,1971). The minimum requirements at the point of export are set out below:

- whole, no part missing or damaged
- sound: rotting and deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of any visible foreign matter,
- fresh in appearance and fully turgid at loading,
- free of abnormal external moisture (traces of juice are allowed),
- free of foreign smell or taste,
- healthy, free from disease or faults or damage or physiological disorders,

Raspberries and Blackberries

- raspberries can be with or without a stalk attached; however, fruit without stalks must be free of calyces and tori,
- the raspberries must be able to withstand transport and handling and arrive in a satisfactory condition.
- each package must be uniform and contain only fruit of the same origin, variety and quality.

There are three classes, 'Extra' class, Class I and Class II, which should not be exported.

The 'Extra' class raspberries and blackberries must be of highest quality. The fruit must be free of defects. Cultivated raspberries must be typical of the variety in shape, development and colour. The fruit must be uniform and regular in ripeness, colouring and size. Tolerances in terms of quality are that no more than 5% of fruit should fall short of 'Extra' class quality standards and then not below Class I standards.

Class I raspberries and blackberries must be of good quality and must possess the characteristics typical of the variety. The fruit can vary slightly in ripeness, colour and shape and should be free of any serious defects. Fruit with hard drupelets are not permitted.

They may be slightly less uniform in size, shape and appearance than 'Extra' quality. Tolerances in terms of quality are that no more than 10% of fruit should fall short of Class I in quality standards and then not below Class II standards. The percentage of maggoty fruit cannot exceed 5%.

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Himbeeren - Raspberries, Brombeeren - Blackberries
- country of origin,
- commercial specifications, class, number of punnets and weight.

This information is demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 0 degrees C, maximum 12 degrees C,
- date of packing, often in code,
- variety name,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Raspberries and Blackberries

Packing is in plastic or papier-mache punnets, with some movement towards the use of transparent lidded plastic types. Punnets are 125g each and there are normally 8 or 12 punnets per tray. In the German market there is a reaction against non-biodegradable packaging materials such as PUVC's. Polyester and fibreboard are preferred. Punnets should be wrapped with ventilated film. The trays are often packed into a master container of polystyrene which is used to contain the cold temperature within the fruit.

Post-harvest

Fruit should be pre-cooled to 2 degrees C within four hours. Average shelf life when held at 0 degrees C and 85-90% RH is from 2 to 6 days dependent on variety. Dry ice is often used in each polystyrene master container. This has the dual function of cooling and raising the carbon dioxide levels. This modified atmosphere with carbon dioxide concentrations of 10 to 30% extends the storage life.

Supply

Some 8,000 tons of raspberries and 1,000 tons of blackberries, loganberries and mulberries are imported annually. The main supply season for raspberries is late June to August, and for blackberries from August to October.

	J	F	M	A	M	J	J	A	S	O	N	D
% imports												
Raspberries	0	0	1	0	0	4	50	40	2	1	0	1
Blackberries	0	1	0	0	0	0	0	49	39	9	0	1

The main off-season suppliers are Chile and Argentina, but New Zealand and Australia also have supply potential.

Price

Very high prices are possible for off-season supplies. These could be over DM 15 per kg for raspberries and perhaps DM 10 per kg for blackberries.

Transport

Air transport with cool chain and rapid customs clearance.

Raspberries and Blackberries

Import tariffs

Rates in percentages ad valorem. Tariff number 0810 20 10 for raspberries and 0810 20 90 for blackberries.

	Full	ACP	GSP	LDDC
Raspberries	11%	11%	9%	0%
Blackberries	12%	5%	5%	0%

Successful Selling

There is good demand for off-season supply from October to June for raspberries and from December to June for blackberries. The only market is for high priced superior quality product. Exporters are recommended always to pre-alert importers and clearance agents of shipments en route.

Cape Gooseberries



Varieties: No specified varieties of the *Physalis peruviana*.

Appearance: The berry is enclosed in a papery, brown, translucent 'Chinese lantern' some 45 to 50 mm long. The fruit itself is smaller. When fully ripe the berry is light green to orange-red with a smooth skin. The market prefers large fruit with a strong yellow to orange colour.

Internal characteristics: Ripe berries are pleasantly tart, with a characteristic aroma.

Production and harvesting

An annual crop grown from seed. Pick by holding stem between thumb, fore and middle finger.

Grading

No ECE or OECD or national grading standards.

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, *Physalis* - Kap- Stachelbeeren,
- country of origin,
- commercial specifications, number of punnets and weight.

The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for fruit, e.g. minimum 10 degrees C, maximum 14 degrees C,
- date of packing, often in code,
- identity of grower.

Cape Gooseberries

Packing is normally 8-10 punnets of 100 grammes in a fibre-board carton or plastic container.

Post-harvest

Optimum storage conditions are 14 degrees C at 80% RH.

Supply

Supplies from South Africa initiated interest but South Africa exports only small quantities and Colombia is now the biggest supplier. Other suppliers are New Zealand, Kenya and Madagascar. Imports arrive throughout the year.

Price

A high priced product, at DM 6 to 8 per kg.

Transport

Exclusively airfreighted.

Import tariffs

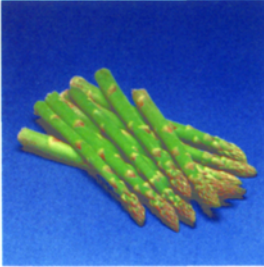
Rates in percentages ad valorem. Tariff number 0810 90 80.

Full	ACP	GSP	LDDC
11%	0%	0%	0%

Successful Selling

Although the quantities imported are still small, the fruit has gained increasing interest in recent times. It is considered to be very healthy because of its high levels of vitamin A. Exotic fruit importers and traders consider that it has a good chance for the future, provided that there is some marketing and promotion, and all consignments are of top quality and taste. This is very much a fruit for high-class specialist retailers and department stores. Exporters should be careful to avoid market oversupply.

Asparagus

**Varieties:**

Numerous different varieties are grown. Some notable varieties are University of California (UC) 157, F1 & F2 UC 157, UC 72, Mary Washington and improved types such as Mary Washington 500 W, Lucullus, Argenteuil, UC-800, Balanco Aleman, Franklin, Rutgars Beacon and Boomlin.

Appearance:

Asparagus spears are classified into three groups according to colour - white, violet (with tips and part of the shoot coloured between pink and purple) and green, when the tips and part or all of the stem are green in colour.

The market prefers white asparagus, which accounts for about 80% of sales. Green asparagus accounts for about 20% of sales but its share is slowly increasing. Purple tipped varieties are also acceptable. The spear tips should be closed, undamaged and with a straight stem.

Internal

characteristics: Asparagus should break easily and exude juice when a fingernail is pushed into the spear. German consumers expect white asparagus to be extremely soft (as soft as butter or butterzart) whereas the green varieties can have more bite. Asparagus must not be stringy or in any way woody.

Asparagus

Production and harvesting

Where crowns do not become dormant, tropical production techniques can be used, enabling harvesting to be programmed so that each bed can give two to three crops per year. This technique can be used to programme production either to supply specific high priced windows or to produce an all year round crop, and thus build up regular consumer buying habits. White asparagus is grown in beds that have been earthed up, and as a result harvesting is twice as labour intensive as for green asparagus. Sharp clean knives are used including specialist knives with serrated edges and angled blades. Harvesting normally has to be carried out daily, except in cool (below 18 degrees C), dull conditions.

Grading

Asparagus grades are defined by the ECE regulation Nr 183/64 with the last amendment 1677/88 of June 15, 1988, and quality standards have also been issued by UN/ECE: No FFV-04 and by the OCED: No 19. The EC minimum requirements are that the vegetable must be:

- whole, intact,
- sound, rotting & deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- fresh in appearance and fresh smelling,
- free of damage caused by rodents or insects,
- practically unbruised,
- free of abnormal external moisture, i.e. adequately 'dried' if it has been washed (spears should not be soaked),
- free of foreign smell or taste,
- have a clean square cut at the base of the spear,
- be able to withstand transport and handling and arrive in satisfactory condition,
- the contents of each package should be uniform in terms of origin, quality, colour and size (if sized).

The asparagus must not have been treated to preserve or restore its fresh appearance, apart from cooling. In addition the shoots 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.

Some differences are allowed in spear colour. 'White' asparagus can have up to 10% violet asparagus, and 'violet' and 'green' asparagus can have up to 10% of another colour.

Asparagus

There are three classes, 'Extra' class, Class I and Class II.

The 'Extra' class asparagus spears must be of superior quality, well formed and practically straight. The spears should have very compact tips. A trace of rust is allowed, provided it can be easily removed by peeling. 'White' asparagus tips must be white. Only a faint tint of pink is allowed provided it appeared after cutting. 'White' and 'violet' asparagus should not have any traces of woodiness, but 'green' asparagus can have a slight trace. To improve the presentation of bundled asparagus, the outside spears can be bevelled up to a height of 1 cm.

The length of the spears must be:

- 17 cm to 22 cm for long asparagus,
- 12 to 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.

The diameter of a spear is measured at its mid-point.

'Extra' class must have a diameter of 12 to 16 mm. Spears of 16 mm must not have a diameter variation of over 8 mm in each bundle. Tolerances in terms of quality are that no more than 5% of the spears should fall short of 'Extra' class quality standards and then not below Class I standards. Slight scarred cracks which appeared after harvesting are allowed. Up to 10% can be outside the size indicated subject to a maximum deviation of 1 cm in length and 2 mm in diameter.

Class I asparagus must be of good quality and well formed. They may be slightly curved. Their tips must be compact. A trace of rust is allowed provided that it can be easily removed by peeling. 'White' asparagus tips may be slightly coloured before cutting, and a faint tint of pink is allowed provided it appeared after cutting and disappears after cooking. 'White' asparagus should not have any traces of woodiness but 'violet' and 'green' asparagus can have a slight trace.

The length specifications are the same as for the 'Extra' class.

Class I must have a diameter of 10 to 16 mm. Over 16 mm is allowed provided that the maximum variation within the bundle does not exceed 10 mm. Tolerances in terms of quality are that no more than 10% of the spears should fall short of Class I quality standards and then not below Class II standards. Slight scarred cracks which appeared after harvesting are allowed. A maximum of 10% can be outside the size indicated subject to a maximum deviation of 1 cm in length and 2 mm in diameter.

Asparagus

Class II asparagus is rarely exported to Germany.

The German market requires large sizes of white asparagus - over 16 mm in diameter and 18 cm long.

Size gradings are :

	'Extra' class	Class 1	Class 2
* 20 mm and over	*	*	*
** 16 mm to 20 mm	*	*	*
10 mm to 16 mm		*	*
8 mm to 10 mm			*

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Asparagus - Spargel, White - Weisse, Violet - Lila Green - Grune, followed by short - Kurz, long - Lang or tips - spitzen,
- country of origin,
- commercial specifications, class, size in maximum and minimum diameters, net weight in kg and, when packed in consumer units, the number of units.

It is strongly recommended that this information is included in the labelling but produce, class and origin are legally demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for asparagus, e.g. minimum 0 degrees C, maximum 4 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Asparagus is generally packed in bundles or packed in trays which are over-wrapped with micro-perforated PVC film. 6 kg bulk packed asparagus requires about 15 litres of internal volume but when packed in 500 gramme units the internal space required is 14 litres for 4 kg. Winter asparagus should be packed in 500 gramme or 1 kg bundles. Crates should contain 8 to 10 bundles or trays.

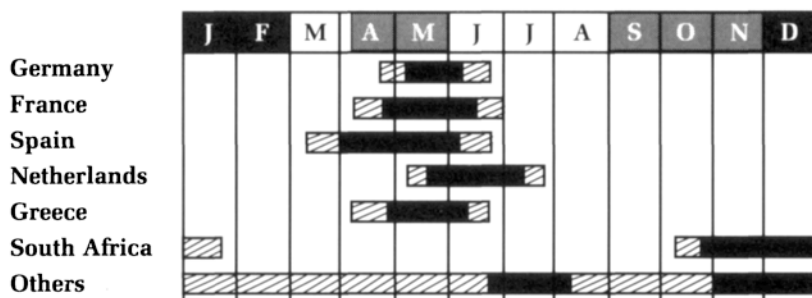
Asparagus

Post-harvest

After cutting, the spears should be washed, dried, trimmed to size, bundled and cooled rapidly to remove field heat. Forced air cooling must have very high humidity, or hydro-cooling should be used to maintain freshness. Reduce temperature to 1 degree C. Note that although standing in water can increase weight by 10%, spears that have been treated in this way can be easily identified. There is a noticeable colour change to grey/yellow, when squeezed water comes out. The spears are often blotchy and do not make a squeaky sound when rubbed. Ideally the spears should be packed so that the freshly cut stems are standing on a wetted sponge or wetted soft cardboard. Storage is possible for up to 10 days at 0 to 2 degrees C and for up to 20 days at 2 to 4 degrees C. Relative humidity must be 95% or above. The respiration heat is high, the crop is sensitive to ethylene but does not itself produce a significant amount. (See International standards: ISO 4186. Asparagus - Guide to Storage & ISO 6882. Asparagus - Guide to Refrigerated Transport.)

Supply

In addition to the local production of some 16,000 tons of asparagus, German imports have more than doubled during the 1980s from around 12,000 tons at the start of the decade to about 27,000 tons at the end. Sources and seasonality of supply are as follows:



Asparagus

Price

Winter prices are around 50% higher than in the summer months. Asparagus is a high priced product, with prices for white asparagus in the winter at DM 12 to 18 per kg and for green DM 6 to 10 per kg, although oversupply in the last season forced prices as low as DM 3 per kg. There are very significant differences in prices between sizes with spears over 16 mm selling at prices approximately 50% higher than 12 to 16 mm spears.

Transport

Asparagus is imported almost exclusively by air.

Import tariffs

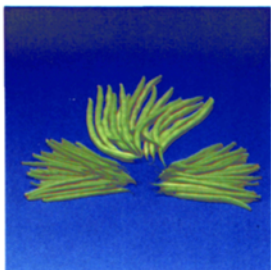
Rates in percentages ad valorem. Tariff number 0709 20 00.

	Full	Cyprus	Turkey	ACP	GSP	LDDC
March 1 to September 30	16%	16%	0%	16%	16%	16%
October 1 to October 31	16%	8.3%	0%	9.6%	12%	0%
November 1 to December 31	16%	10.2%	0%	9.6%	12%	0%
January 1 to January 15	16%	10.2%	0%	7.2%	12%	0%
January 16 to January 31	16%	10.2%	0%	9.6%	12%	0%
February 1 to February 28	16%	16%	0%	16%	12%	0%
October 1 to January 31	16%		0%	9.6%	12%	16%

Successful Selling

White asparagus is consumed as a meal in itself and will always remain a large volume product. Import opportunities exist from September to March, but the optimum periods are December to February. The size of the market is expected to increase in response to demand from new consumers in Eastern Germany. The green and purple types are used as side dishes and are considered likely to develop as consumers become more sophisticated in their cooking. They are not likely to replace the white asparagus. The same market window should be targeted.

Green Beans



Varieties: Stringless bobby bean types are the dominant green beans consumed. Fine and very fine beans are often called Princess beans.

Appearance: Green, fresh, whole and healthy in appearance with straight pods.

Internal characteristics: Stringless bobby beans have round cross sections and are harvested when the seeds are still small and the pod stringless but beginning to swell.

Production and harvesting

Fine beans normally need to be harvested daily while bobby beans can be harvested on alternate days. Harvesting should be completed as early as possible in the day. Harvested beans must be kept out of direct sunlight in the field by keeping the field box covered with a clean damp cloth. Produce should be moved to grading stations as soon as possible. Picking should include a short portion of the stem.

Grading

Green bean grades are defined by the EC regulation No 58/62 (the most recent amendment Nr 920/89 of April 10, 1989) and quality standards have been issued by UN/ECE: No FFV-06 and by OCED: No 15. The EC minimum requirements are that the vegetable must be:

- whole, intact,
- sound: rotting and deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of foreign matter,
- fresh in appearance,
- free of damage caused by insects and/or other pests,

Green Beans

- free of abnormal external moisture,
- free of foreign smell or taste,
- able to withstand transport and handling and arrive in satisfactory condition,
- the contents of each package should be uniform in terms of origin, variety and quality, and, in the case of needle beans, the same size.

Beans are divided into two groups, beans 'en filet' (needle beans) or fine beans, and other beans such as bobby beans.

Fine beans are graded into three classes, 'Extra' class, Class I and Class II, while other beans are graded into two classes, Class I and Class II.

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

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

Class II needle beans must satisfy the minimum requirements, be sufficiently tender and the seeds should not be large. Slightly superficial defects are allowed provided the beans retain their essential characteristics of quality, shelf life and presentation. Beans can be graded into three sizes - very fine, fine and average with a pod width exceeding 9 mm. Quality tolerances are that no more than 10% of the beans can fall short of the minimum requirements with the exception of gloeosporium, bean spot and rotting for which there can be no shortfall. A maximum of 10% can be outside the size specifications.

Class I for other beans, such as bobby beans, must be of good quality. The beans should be young and 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 I needle beans.

Green Beans

Class II beans must satisfy minimum requirements. They must be reasonably young and tender. Provided that the beans retain their essential characteristics of quality, shelf life and appearance the following defects are allowed: the seeds can be slightly larger than those in Class I, slight superficial defects and blemishes caused by wind are acceptable, but must be free of rust spots. Beans with strings are allowed.

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, beans - Prinzessbohnen, with size classes, very fine -Sehr fein; fine - Fein; average - Mittelfein, green beans - Grüne Bohnen or Bobby Bean - Bobbybohnen,
- country of origin,
- commercial specifications, class, net weight in kg.

It is strongly recommended that this information is included in the labelling but produce, class and origin are legally demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for asparagus, e.g. minimum 7 degrees C, maximum 10 degrees C
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Beans are packed in cartons of net weights of 5 kg and 2.7 kg and prepacked in 250 and 500 gramme consumer containers. The 2.7 kg cartons require an internal volume of 6 litres.

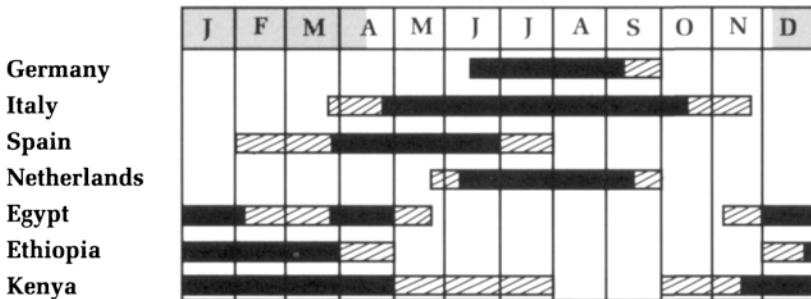
Post-harvest

Grading and packing should be completed within the hour. Storage should be set at 10 to 12 degrees C. Cooling below this point will result in desiccation and excessive condensation if the beans are exposed to warm moist air. Relative humidity should be 90 to 95%. The respiration rate is high, ethylene production is low but sensitivity high. Maximum shelf life is 1 to 2 weeks.

Green Beans

Supply

Imports amount to 14,000 to 16,000 tons per annum. Import figures have been static over the last half of the 1980s. The major suppliers are Italy (35%), Spain (30%) and the Netherlands (10%). Of these only Spain continues to produce beans throughout the winter. Kenya, Egypt and Ethiopia are the main non-EC suppliers and collectively provide about 15% of total imports -about 500 tons each per annum.



The peak import month is June when around 3,000 tons are imported. During the months from April to November about 1,000 to 1,500 tons are imported. The lowest supply period is January to March.

Price

Bobby bean prices for airfreighted produce are in the low range of DM 4 to 5 per kg during the optimum winter import period. Fine beans sell at DM 5.5 to 6.5 per kg during the months from November to April.

Transport

Produce is airfreighted.

Import tariffs

Rates in percentages ad valorem. Tariff numbers 0708 2010 and 2090.

Green Beans

	Full	ACP	GSP	LDDC
October 1 to June 30	13%	0%	13%	0%
July 1 to September 30	17%	0%	17%	0%

Successful Selling

The biggest market is for bobby beans. The best opportunities for high prices are from January to March. Prices are relatively low for bobby beans and exporters should only contemplate the market if cheap airfreight rates can be obtained. The fine and extra fine bean market is small and well supplied by Kenya.

Cherry Tomatoes



Varieties: Sweet 100, Cherita, Evita and Gardeners' Delight.

Appearance: Small sized with a good red colour. Yellow types do not sell in Germany.

Internal characteristics: Cherry tomatoes must have a distinctive flavour and should meet the minimum acid/sugar levels flavour balance - titratable acids 1.1%, and sugars by refractometry 5.5% of minimum soluble solids, tested three days after picking.

Production and harvesting

Rapid harvesting and washing in the early part of the day. Primary grading should be carried out by the picker. This reduces post-harvest handling. Fruit is normally harvested at threequarter ripe stage to achieve full flavour development in the fruit.

Grading

Cherry tomatoes are subject to the same standards as other tomatoes, except for size (see EC No 778/83 of March 30, 1983). The EC minimum requirements are that the vegetable must be:

- whole, intact,
- sound: rotting and deteriorating produce which is unfit for consumption must be excluded,
- clean and practically free of visible foreign matter,
- fresh in appearance,
- free of abnormal external moisture,
- free of foreign smell or taste,
- able to withstand transport and handling and arrive in satisfactory condition,

Cherry Tomatoes

- the contents of each package should be uniform in terms of origin, variety and quality, the same size and practically uniform in ripeness and colour.

Only two classes are defined for cherry tomatoes, 'Extra' class and Class I. Cherry tomatoes must be round. The size specifications below are sometimes used by commercial buying organisations.

'Extra' class cherry tomatoes must be of superior quality. They must be firm and free from 'green-backs' and other defects, with the exception of very slight superficial defects which do not affect the general appearance of the produce, quality, shelf life and presentation. Quality tolerances are that no more than 5% of the cherry tomatoes can fall short of 'Extra' class quality standards and then not below Class I standards.

Class I cherry tomatoes must be of good quality, reasonably firm and characteristic of the variety. The fruit must be free of cracks and visible 'green backs'. Provided that the general appearance, quality, shelf life and presentation is not affected some defects are allowed. Slight defects in shape, colouring, skin and very slight bruises are all permitted. 'Extra' class size grading specifications and tolerances apply. Quality tolerances are that no more than 10% of the beans can fall short of Class I quality standards and then not below Class II standards.

Packaging

The labelling on each package must be clearly legible and visible, and should state:

- identification, name and address (or code) of packer or dispatcher,
- produce, Cherry Tomatoes or Cocktail Tomatoes - Kirschtomaten, and optionally variety,
- country of origin,
- commercial specifications, class, net weight in kg and minimum and maximum diameters.

It is strongly recommended that this information is included in the labelling but produce, class and origin are legally demanded by the EC. The following is useful information which will assist in marketing:

- 'this side up' symbol, 'fragile' symbol, temperature symbol with indication of correct storage temperature for cherry tomatoes, e.g. minimum 7 degrees C, maximum 12 degrees C,
- date of packing, often in code,
- tare weight in kg with maximum deviation in %,
- identity of grower.

Cherry Tomatoes

Packing is normally in 250 gramme punnets with 8 to 12 per tray from Senegal and 9 punnets per tray from the Netherlands. At the time of packing it is advisable to include an additional 5 to 10% weight to make up for weight loss.

Post-harvest

Washing the fruit may not always be necessary but serves two purposes. It helps to remove dust and sprays as well as reducing field heat. Optimum storage temperatures are 8 degrees C to 10 degrees C for threequarter ripe fruit and a relative humidity of 90%. If the temperature falls below 10 degrees C the flavour is impaired and there is a tendency for fruit to become bladdery. Shelf life of up to two weeks is possible.

Supply

Imports of cherry tomatoes cannot be separated in the statistics from total imports of tomatoes, which amount to over 400,000 tons per year. There is some production of cherry tomatoes in Germany. The chief source of imports is the Netherlands and other sources include Senegal, Zimbabwe and South Africa. Zimbabwean produce in particular is considered to have superior taste and aroma. Imports from countries outside the EC are greater during the winter months when the volume of production in Northern Europe is restricted.



It is generally believed the German market for cherry tomatoes is not as developed as the French and British markets.

Price

Prices in the winter are approximately DM 4 to 6 per kg.

Transport

An airfreighted product.

Cherry Tomatoes

Import tariffs

Rates in percentages ad valorem. Tariff numbers 0702 0010 and 0090.

	Full	Cyprus	ACP	GSP	LDDC
November 1 to November 14	11%	11%	11%	11%	11%
November 15 to April 30	11%	2.8%	11%	11%	11%
May 1 to May 14	11%	2.8%	11%	11%	11%
May 15 to October 31	18%	18%	18%	18%	18%

Successful Selling

The demand for cherry tomatoes is likely to expand with the growing interest in well flavoured produce. The optimum supply period for exporters is from December to February. Southern European production from Spain - the Canary Islands - traditional suppliers to the German winter tomato market, is likely to offer keen competition to airfreighted imports.