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EAST AFRICAN STANDARD

Fresh figs — Specification and grading



EAST AFRICAN COMMUNITY

HS 0804.20.000

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Introduction

In the preparation of this East African Standard, the following sources were consulted extensively:

UNECE STANDARD FFV-17:1988, *Marketing and commercial quality control of fresh figs*

CODEX STAN 193:1995 (Rev.5:2009), *General Standard for Contaminants and Toxins in Foods*

CODEX STAN 228:2001 (Rev.1:2004), *General methods of analysis for contaminants*

CODEX STAN 230:2001 (Rev.1:2003), *Maximum levels for lead*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp

USDA Foreign Agricultural Service website: <http://www.mrlatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>

USDA Plant Inspectorate Service website: http://www.aphis.usda.gov/import_export/plants

European Union: http://ec.europa.eu/sanco_pesticides/public

Assistance derived from these sources and others inadvertently not mentioned is hereby acknowledged.

This standard has been developed to take into account:

- the needs of the market for the product;
- the need to facilitate fair domestic, regional and international trade and prevent technical barriers to trade by establishing a common trading language for buyers and sellers.
- the structure of the CODEX, UNECE, USA, ISO and other internationally significant standards;
- the needs of the producers in gaining knowledge of market standards, conformity assessment, commercial cultivars and crop production process;
- the need to transport the product in a manner that ensures keeping of quality until it reaches the consumer;
- the need for the plant protection authority to certify, through a simplified form, that the product is fit for crossborder and international trade without carrying plant disease vectors;
- the need to promote good agricultural practices that will enhance wider market access, involvement of small-scale traders and hence making fruit and vegetable production a viable means of wealth creation; and
- the need to keep unsatisfactory produce from the market by allowing the removal of unsatisfactory produce from the markets and to discourage unfair trade practices e.g. trying to sell immature produce at the beginning of the season when high profits can be made. Immature produce leads to dissatisfaction of customers and influences their choices negatively, which disadvantages those traders who have waited until the produce is mature.

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Fresh figs — Specification and grading

1 Scope

This standard applies to figs of varieties (cultivars) grown from *Ficus carica* L. to be supplied fresh to the consumer, figs for industrial processing being excluded.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CAC/GL 21, *Principles for the Establishment and Application of Microbiological Criteria for Foods*

CAC/RCP 1, *Recommended International Code of Practice — General Principles of Food Hygiene*

CAC/RCP 44, *Recommended International Code of Practice for the Packaging and Transport of Tropical Fresh Fruit and Vegetables*

CAC/RCP 53, *Code of Hygienic Practice for Fresh Fruits and Vegetables*

EAS 38, *Labelling of prepackaged foods — Specification*

CD/K/378:2010, *Horticultural industry — Code of practice*

3 Definitions

For the purpose of this standard the following definition shall apply:

3.1

similar varietal characteristics

having the same general characteristics, such as shape, texture and colour

3.2

well matured

reaching a stage of development which is indicative of good handling and keeping quality for the variety

3.3

cracked

split open, exposing the flesh

3.4

damage

any specific defect which materially detracts from the appearance or edible or marketing quality

3.5

serious damage

any specific defect which seriously detracts from the appearance or the edible or marketing quality. The following specific defects shall be considered as serious damage:

- (1) Scars, except stem scars, caused by rodents or other means which are not well healed or corked over, or which cover more than 25 percent of the surface in the aggregate, or which form depressions or pits that seriously affect the appearance.

- (2) Dry rot which affects an area more than 5 cm in diameter in the aggregate on a 4.5 kg specimen, or correspondingly smaller or larger areas depending on the size of the specimen.

4 Provisions concerning quality

4.1 General

The purpose of the standard is to define the quality requirements of fresh figs at the export control stage, after preparation and packaging.

4.2 Minimum requirements

4.2.1 In all classes, subject to the special provisions for each class and the tolerance allowed, figs must be:

- (a) intact
- (b) sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded
- (c) clean, practically free of any visible foreign matter
- (d) fresh in appearance
- (e) practically free from pests
- (f) practically free from damage caused by pests
- (g) free of abnormal external moisture
- (h) free of any foreign smell and/or taste.

4.2.2 The development and condition of the figs must be such as to enable them:

- (a) to withstand transport and handling, and
- (b) to arrive in satisfactory condition at the place of destination.

4.3 Classification

Figs are classified in three classes defined below:

4.3.1 "Extra" Class

Figs in this class must be of superior quality. In shape, appearance, development and colouring, they must be typical of the variety and the stem must be intact.

They must be free from defects with the exception of very slight superficial skin defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

4.3.2 Class I

Figs in this class must be of good quality. They must be characteristic of the variety.

The following slight defects, however may be allowed, providing these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- slight defect in shape and development

- slight defect in colouring
- the stem may be slightly damaged, provided the skin is not split
- slight longitudinal cracks in the skin
- cracks on the side opposite to the stem, provided their total length does not exceed 3 cm
- slight corkiness of the skin (woody figs) or slight abrasion not exceeding 1 cm in length for elongated defects or an area of 0.5 cm² for others.

4.3.3 Class II

This class includes figs which do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified above.

The flesh must be free from major defects.

The following defects may be allowed provided the figs retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape and development
- defects in colour
- the stem may be missing, provided its loss has not caused deep splitting of the skin
- longitudinal cracks in the skin
- skin defects for each fruit within the following limits:
 - cracks on the opposite side to the stem, provided the overall length does not exceed 4 cm and no single crack is longer than 3 cm
 - slight corkiness of the skin (woody figs) or slight abrasion not exceeding 2 cm in length for elongated defects or an area of 1.5 cm² for others
 - longitudinal cracks in the skin.

5 Provisions concerning sizing

Size is determined by the maximum diameter of the equatorial section.

The difference in diameter between the smallest and largest fruit in the same package shall be limited to:

- 5 mm for fruit packed in rows and layers
- 10 mm for fruit loose packed in the package.

In addition, a minimum size of 40 mm is laid down for all classes.

6 Provisions concerning tolerances

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

6.1 Quality tolerances

6.1.1 "Extra" Class

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

6.1.2 Class I

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

6.1.3 Class II

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

6.2 Size tolerances

For all classes: 10 per cent by number or weight of figs conforming to the size immediately above or below that chosen with a maximum variation of 5 mm below the minimum in the case of fruit in the smallest size classification.

7 Provisions concerning presentation

7.1 Uniformity

The contents of each package must be uniform and contain only figs of the same origin, variety, quality and appreciably the same degree of ripeness or development and, for the "Extra" Class, of uniform colouring.

The visible part the contents of the package must be representative of the entire contents.

7.2 Packaging

Figs must be packed in such a way as to protect the produce properly.

The materials used inside the package must be new, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly paper or stamps, bearing trade specifications is allowed provided the printing or labelling has been done with non-toxic ink or glue.

Packages must be free of all foreign matter.

7.3 Presentation

Figs must be presented as follows:

- for the "Extra" Class, arranged in a single layer with each fig separated from the others by suitable means
 - for Class I, arranged in one or two layers separated by a sheet of paper
 - for Class II, arranged in one or more layers or loose in the package
- for small packages containing 1 kg or under, the fruit may be either in layers or loose, whatever its class.

8 Marking and labelling

8.1 Consumer packages

In addition to the requirements of EAS 38, the following specific provisions apply:

8.1.1 Nature of produce

If the produce is not visible from the outside, each package shall be labelled as to the name of the produce "Fennel" or "Sweet Anise" and may be labelled as to name of the variety and/or commercial type.

8.2 Non-retail containers

Each package¹ must bear the following particulars in letters grouped on the same side, legibly and indelibly marked and visible from the outside:

8.2.1 Identification

The exporter, packer and/or dispatcher shall be identified by name and physical address (e.g. street/city/region/postal code and, if different from the country of origin, the country) or a code mark officially recognized by the national authority.²

8.2.2 Nature of produce

- "Figs" or "fresh figs" if the contents of the package are not visible from the outside
- Name of the variety for the "Extra" Class.

8.2.3 Origin of produce

Country of origin and, optionally, district where grown, or national, regional or local place name.

8.2.4 Commercial specifications

- Class
- Size, expressed as maximum and minimum diameters (optional)
- Number of fruit or net weight.

8.2.5 Official control mark (optional)

9 Contaminants

9.1 Pesticide residues

Figs shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity. The limits listed below were current as of the dates indicated. Annex E provides current MRLs for the USA, EU and Codex markets.

¹ Package units of produce prepacked for direct sale to the consumer shall not be subject to these marking provisions but shall conform to the national requirements. However, the markings referred to shall in any event be shown on the transport packaging containing such package units.

² The national legislation of a number of countries requires the explicit declaration of the name and address. However, in the case where a code mark is used, the reference "packer and/or dispatcher (or equivalent abbreviations)" has to be indicated in close connection with the code mark, and the code mark should be preceded by the ISO 3166 (alpha) country/area code of the recognizing country, if not the country of origin.

Maximum pesticide residue limits and extraneous maximum residue limits in figs (current as at 2009-06-07)

Type	Unit symbol	Limit	Method of test	Notes
Figs, Dried or dried and candied				
BROMIDE ION	MRL (mg/kg)	250		
ETHEPHON	MRL (mg/kg)	10		

9.2 Heavy metals

Cucumbers shall comply with those maximum levels for heavy metals established by the Codex Alimentarius Commission for this commodity. The current limits are as indicated below:

Metal	Unit of measurement	Maximum limit	Test method
Lead (Pb)	mg/kg wet weight	0.10	ISO 6633 (AAS)
Cadmium (Cd)	mg/kg wet weight	0.10	ISO 6561-1 or 6561-2

10 Hygiene

10.1 It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of CAC/RCP 1, CAC/RCP 53, and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

10.2 The produce should comply with any microbiological criteria established in accordance with CAC/GL 21.



Varieties of figs




Ripening figs

Draft for comments only

ard

Annex C
(informative)

Model certificate of conformity with standards for fresh fruits and vegetables

<p>1. Trader:</p>	<p>Certificate of conformity with the Community marketing standards applicable to fresh fruits and vegetables</p> <p>No.</p> <p>(This certificate is exclusively for the use of inspection bodies)</p>		
<p>2. Packer identified on packaging (if other than trader)</p>	<p>3. Inspection body</p>		<p>5. Region or country of destination</p>
<p>6. Identifier of means of transport</p>	<p>7.</p> <p><input type="checkbox"/> Internal</p> <p><input type="checkbox"/> Import</p> <p><input type="checkbox"/> Export</p>		
<p>8. Packages (number and type)</p>	<p>9. Type of product (variety if the standards specifies)</p>	<p>10. Quality Class</p>	<p>11. Total net weight in kg</p>
<p>12. The consignment referred to above conforms, at the time of issue, with the Community standards in force, vide:</p> <p><u>CD/K/055:2010, Fresh figs — Specification and grading</u></p> <p>_____</p> <p>Customs office foreseen Place and date of issue</p> <p>Valid until (date):</p> <p>Signatory (name in block letters):</p> <p>Signature Seal of competent authority</p>			
<p>13. Observations:</p>			

(¹) Where the goods are being re-exported, indicate the origin in box 9.

Annex D (informative)

Figs — Fact sheet

D.1 Introduction

While the ancient history of the fig centers around the Mediterranean region, and it is most commonly cultivated in mild-temperate climates, it nevertheless has its place in tropical and subtropical horticulture. Botanically identified as *Ficus carica* L. (family Moraceae), it is unique in a genus embracing perhaps over 1,000 species, mostly giant "rubber trees", and mostly tropical. It is almost universally known simply as fig, common fig, or edible fig. The name is very similar in French (*figue*), German (*feige*), Italian and Portuguese (*figo*). In Spanish it is *higo* or *brevo*. Haitians give it the name, *figue France*, to distinguish it from the small, dried bananas called "figs".

D.2 Description

The fig is a tree of small dimensions, 3-9 m high, with numerous spreading branches and a trunk rarely more than 17.5 cm in diameter. It contains copious milky latex. The root system is typically shallow and spreading, sometimes covering 15 m of ground, but in permeable soil some of the roots may descend to 6 m. The deciduous leaves are palmate, deeply divided into 3 to 7 main lobes, these more shallowly lobed and irregularly toothed on the margins. The blade is up to 25 cm in length and width, fairly thick, rough on the upper surface, softly hairy on the underside. What is commonly accepted as a "fruit" is technically a synconium, that is, a fleshy, hollow receptacle with a small opening at the apex partly closed by small scales. It may be obovoid, turbinate, or pear-shaped, 2.5-10 cm long, and varies in color from yellowish-green to coppery, bronze, or dark-purple. Tiny flowers are massed on the inside wall. In the case of the common fig discussed here, the flowers are all female and need no pollination. There are 3 other types, the "Caprifig" which has male and female flowers requiring visits by a tiny wasp, *Blastophaga grossorum*; the "Smyrna" fig, needing crosspollination by Caprifigs in order to develop normally; and the "San Pedro" fig which is intermediate, its first crop independent like the common fig, its second crop dependent on pollination. The skin of the fig is thin and tender, the fleshy wall is whitish, pale-yellow, or amber, or more or less pink, rose, red or purple; juicy and sweet when ripe, gummy with latex when unripe. Seeds may be large, medium, small or minute and range in number from 30 to 1,600 per fruit.

D.3 Origin and distribution

The fig is believed to be indigenous to Western Asia and to have been distributed by man throughout the Mediterranean area. It has been cultivated for thousands of years, remnants of figs having been found in excavations of Neolithic sites traced to at least 5,000 B.C. As time went on, the fig-growing territory stretched from Afghanistan to southern Germany and the Canary Islands.

D.4 Varieties

There are many cultivated varieties in each class of figs. In fact, over 700 varietal names are in use but many are synonyms. Here we need only present those that are suited to warm areas and do not require pollination. Most popular among these are 'Celeste' and 'Brown Turkey', followed by 'Brunswick' and 'Marseilles', described as follows:

'Celeste'—pear-shaped, ribbed, sometimes with a short neck and slender stalk to 3/4 in (2 cm) long; the eye (opening at apex) is closed; the fruit is small to medium; the skin purplish-brown or bronze tinged with purple and covered with bloom; the pulp whitish or pinkish amber, of rich flavor and good quality; almost seedless. Main crop is heavy but of short duration. There is rarely an early, "breba", crop.

'Brown Turkey'—broad-pyriform, usually without neck; medium to large; copper-colored; pulp is whitish shading to pink or light red; of good to very good quality; with few seeds. The tree is prolific.

The main crop, beginning in mid-July, is large; the early, breba, crop is small. This cultivar is well adapted to warm climates. It is grown on all the islands of Hawaii.

'Brunswick' ('Magnolia')—leaves narrow-lobed; fruits of main crop are oblique-turbinate, mostly without neck; fruit stalk thick, often swollen; fruit of medium size; bronze or purple-brown; pulp whitish near skin, shading to pink or amber; hollow in center; of fair to good quality; nearly seedless. Ripens over a long season. Breba crop poor; large, bronze-skinned; flesh light-red; coarse.

'Marseilles' ('White Marseilles', or 'Lemon')—fruits of main crop round to oblate without neck; on slender stalks to 1/4 in (6 mm) long; of medium size. Those of breba crop, turbinate with short, thick neck and short stalk; yellow-green with small green flecks; pulp white, sweet; seeds large, conspicuous. Of fair quality.

In Queensland, 'Brown Turkey', 'Adriatic', 'Genoa' and 'Purple Genoa' perform very well.

'Adriatic' ('White Adriatic', or 'Grosse Verte')—turbinate with short, thick neck and short stalk; above medium size; green to yellowish-green with red pulp; of distinctive flavor and very good quality. In early, minor, breba crop the fruits are oblique-pyriform, large, green, often tinged with purplish-red with dark-red pulp and strong flavor.

'Genoa' ('White Genoa')—pyriform or turbinate, very faintly ribbed; neck thick and short, or absent; above medium in size; skin downy, greenish-yellow; pulp greenish-white near skin, mostly amber tinged with red; hollow; of fair quality. Fruits of breba crop oblique-obovate with thick neck and short stalk; yellowish-green externally; pulp light-red; of fair to good quality.

'Purple Genca' ('Black Genoa'; 'Black Spanish') oblong, broad at apex, narrow at base; large; very dark-purple with thick blue bloom; pulp yellowish becoming reddish to red at the center; juicy, with sweet, rich flavor.

At Saharanpur, India, 'Brown Turkey', 'Bangalore', 'Black Ischia' and 'Lucknow' are successfully grown. Around Bombay, there is only one variety, 'Poona'.

'Black Ischia' ('Blue Ischia')—an Italian variety; main crop is elongated pear shaped with many noticeable ribs; short neck and short to medium stalk; large, 2 1/2 in (6.35 cm) long and 1 1/2 in (3.8 cm) wide; dark purple-black except at the apex where it is lighter and greenish; there are many golden flecks; skin is wholly coated with thin, dark-blue bloom; eye open, with red-violet scales; pulp is violet-red, of good quality. In the breba crop, there are few ribs and mostly indistinct; the fruit is small, about 1 1/2 in (3.8 cm) long and of the same width at the apex; the pulp is red to greenish-amber; of poor flavor. The tree is particularly ornamental and the leaves are glossy, only shallowly 3 lobed. A heavy bearer.

'Poona'-bell-shaped, of medium size, weighing about 1 1/2 oz (42 g); thin-skinned; light-purple with red flesh, of sweet, good flavor.

We have no descriptions of 'Bangalore' and 'Lucknow'.

D.5 Climate

In southern India, 'Marseilles' flourishes on hills above 5,000 ft (1,525 m). In tropical areas generally, figs thrive between 2,600 and 5,900 ft (800-1,800 m). The tree can tolerate 10° to 20° of frost in favorable sites. It should have a dry climate with light early spring rains if it is intended for the production of fresh fruit. Rains during fruit development and ripening are detrimental to the crop, causing the fruits to split. The semi arid tropical and subtropical regions of the world are ideal for fig-growing if means of irrigation are available. But very hot, dry spells will cause fruit-drop even if the trees are irrigated.

D.6 Soil

The fig can be grown on a wide range of soils; light sand, rich loam, heavy clay or limestone, providing there is sufficient depth and food drainage. Sandy soil that is medium-dry and contains a good deal of lime is preferred when the crop is intended for drying. Highly acid soils are unsuitable. The pH should be between 6.0 and 6.5. The tree is fairly tolerant of moderate salinity.

D.7 Propagation

Fig trees have been raised from seed, even seed extracted from commercial dried fruits. Ground- or air-layering can be done satisfactorily, and rapid mass multiplication by tissue culture has been achieved in Greece, but the tree is commonly propagated by cuttings of mature wood 2 to 3 years of age, 1.25-2 cm thick and 20-30 cm long. Planting must be done within 24 hours but, first, the upper, slanting end of the cutting should be treated with a sealant to protect it from disease, and the lower, flat, end with a root-promoting hormone. Trees of unsatisfactory varieties can be topworked by shield- or patch-budding, or cleft- or bark-grafting.

D.8 Culture

Cuttings are raised in nursery beds and are set out in the field after 12 or 15 months. They may be spaced from 6 to 25 ft (1.8-7.5 m) apart depending on the cultivar and the fertility of the soil. A spacing of 13 x 13 ft (4x4 m) allows 260 trees/acre (625 trees/ha). In Colombia, growers are advised to set the trees at 10 x 10 ft (3x3 m) on level land, 10 x 13 ft (3x4 m) on slopes. Fruiting will commence in less than a year from planting out. Young plants will benefit from shading with palm fronds or other material until they are well established. A fertilizer formula of 10-30-10 or 10-20-20 NPK is recommended 2 oz (about 60 g) each for young plants and 1/5 lb (100 g) each for adults, plus minor elements at the rate of 1 oz (30 g) per tree every 6 months.

Fig trees are cut back severely in fall or winter, depending on whether the crop is desired the following summer or fall. Branches are often notched to induce lateral branching and increase the yield. If there are heavy rains, drainage ditches should be dug to prevent water-logging. Fig trees remain productive up to 12 or 15 years of age and thereafter the crop declines though the trees may live to a very advanced age.

D.9 Season

Fig trees usually bear 2 crops a year, the early season ("breba") fruits being inferior and frequently too acid, and only those of the second, or main, crop of actual value.

In Colombia and Venezuela, some fruits are borne throughout the year but there are 2 principal crops, one in May and June and the other in December and January.

Large-scale fig producers in California spray ethephon to speed up ripening and then wind-machines are drawn past the trees or helicopter overflights are made to hasten fruit drop, thus shortening the harvest period by as much as 10 days in order to avoid impending rain and insect attack. Proper timing of the growth regulator is crucial to fruit quality.

D.10 Harvesting and yield

The fruits may be picked from the tree or gathered normally or by mechanical sweepers after they fall to the ground. 'Brunswick' is so tender it must be picked when slightly unripe in order to be firm enough for processing. Workers must wear gloves and protective clothing because of the latex. Harvested fruits are spread out in the shade for a day so that the latex will dry a little. Then they are transported to processing plants in wooden boxes holding 22 to 33 lbs (10-15 kg). In India, a fig tree bears 180 to 360 fruits per year. Venezuelan growers expect 132 to 176 lbs (6-8 kg) per tree.

D.11 Keeping quality

Fresh figs are very perishable. At 4.44°-6.11°C and 75% relative humidity, figs remain in good condition for 8 days but have a shelf life of only 1 to 2 days when removed from storage. At 10°C and relative humidity of 85%, figs can be kept no longer than 21 days. They remain in good condition for 30 days when stored at 0°-1.67°C. If frozen whole, they can be maintained for several months.

D.12 Pests and diseases

Fig trees are prone to attack by nematodes (especially *Meloidogyne* spp.) and, in the tropics, have been traditionally planted close to a wall or building so that the roots can go underneath and escape

damage. A heavy mulch will serve equally well. Today, control is possible with proper application of nematicides.

In India, a stem-borer, *Batocera rufomaculata*, feeds on the branches and may kill the tree. Lepidopterous pests in Venezuela include the fig borer, *Azochis gripusalis*, the larvae of which feed on the new growth, tunnel down through the trees to the roots and kill the tree. Another, called *cachudo de la higuera*, has prominently horned larvae up to 3 1/8 in (8 cm) long that can destroy a fig tree in a few days. There are also coleopterous insects of the genera *Epitrix* and *Colaspis* that perforate and severely damage the leaves and shoots. Scale insects include *Asterolecanium* sp. which attacks the bark of trees weakened by excessive humidity or prolonged drought, and the lesser enemy, *Saissetia haemispherica*.

A common and widespread problem is leaf rust caused by *Cerotelium fici*, bringing about premature leaf fall and reducing yields. It is most prevalent in rainy seasons. Leaf spot results from infection by *Cylindrocladium scoparium* or *Cercospora fici*. Fig mosaic is caused by a virus and is incurable. Affected trees must be destroyed.

The dried fruit beetle, or sour bug, *Carpophilus* spp., enters the fruit through the eye and leads to souring and smut caused by *Aspergillus niger*. This fungus may attack ripening fruits.

D.13 Food uses

Some people peel the skin back from the stem end to expose the flesh for eating out of-hand. The more fastidious eater holds the fruit by the stem end, cuts the fruit into quarters from the apex, spreads the sections apart and lifts the flesh from the skin with a knife blade, discarding the stem and skin. Commercially, figs are peeled by immersion for 1 minute in boiling lye water or a boiling solution of sodium bicarbonate. In warm, humid climates, figs are generally eaten fresh and raw without peeling, and they are often served with cream and sugar. Peeled or unpeeled, the fruits may be merely stewed or cooked in various ways, as in pies, puddings, cakes, bread or other bakery products, or added to ice cream mix. Home owners preserve the whole fruits in sugar sirup or prepare them as jam, marmalade, or paste. Fig paste (with added wheat and corn flour, whey, sirup, oils and other ingredients) forms the filling for the well known bakery product, "Fig Newton". The fruits are sometimes candied whole commercially. In Europe; western Asia, northern Africa and California, commercial canning and drying of figs are industries of great importance.

Some drying is done in Poona, India, and there is currently interest in solar-drying in Guatemala. Usually, the fruits are allowed to fully ripen and partially dehydrate on the tree, then are exposed to sulphur fumes for about a half hour, placed out in the sun and turned daily to achieve uniform drying, and pressed flat during the 5- to 7-day process. 'Black Mission' and 'Kadota' figs are suitable for freezing whole in sirup, or sliced and layered with sugar.

Dried cull figs have been roasted and ground as a coffee substitute. In Mediterranean countries, low-grade figs are converted into alcohol. An alcoholic extract of dried figs has been used as a flavoring for liqueurs and tobacco.

D.14 Toxicity

The latex of the unripe fruits and of any part of the tree may be severely irritating to the skin if not removed promptly. It is an occupational hazard not only to fig harvesters and packers but also to workers in food industries, and to those who employ the latex to treat skin diseases.

D.15 Other uses

Seed oil: Dried seeds contain 30% of a fixed oil containing the fatty acids: oleic, 18.99%; linoleic, 33.72%; linolenic, 32.95%; palmitic, 5.23%; stearic, 2.1 8%; arachidic, 1.05%. It is an edible oil and can be used as a lubricant.

Leaves: Fig leaves are used for fodder in India. They are plucked after the fruit harvest. Analyses show: moisture, 67.6%; protein, 4.3%; fat, 1.7%; crude fiber, 4.7%; ash, 5.3%; N-free extract, 16.4%;

pentosans, 3.6%; carotene on a dry weight basis, 0.002%. Also present are bergaptene, stigmasterol, sitosterol, and tyrosine.

In southern France, there is some use of fig leaves as a source of perfume material called "fig-leaf absolute"—a dark-green to brownish-green, semi-solid mass or thick liquid of herbaceous-woody-mossy odor, employed in creating woodland scents.

Latex: The latex contains caoutchouc (2.4%), resin, albumin, cerin, sugar and malic acid, rennin, proteolytic enzymes, diastase, esterase, lipase, catalase, and peroxidase. It is collected at its peak of activity in early morning, dried and powdered for use in coagulating milk to make cheese and junket. From it can be isolated the protein-digesting enzyme *ficin* which is used for tenderizing meat, rendering fat, and clarifying beverages.

In tropical America, the latex is often used for washing dishes, pots and pans. It was an ingredient in some of the early commercial detergents for household use but was abandoned after many reports of irritated or inflamed hands in housewives.

Medicinal Uses: The latex is widely applied on warts, skin ulcers and sores, and taken as a purgative and vermifuge, but with considerable risk. In Latin America, figs are much employed as folk remedies. A decoction of the fruits is gargled to relieve sore throat; figs boiled in milk are repeatedly packed against swollen gums; the fruits are much used as poultices on tumors and other abnormal growths. The leaf decoction is taken as a remedy for diabetes and calcifications in the kidneys and liver. Fresh and dried figs have long been appreciated for their laxative action.

Food Value Per 100 g of Edible Portion*

	<i>Fresh</i>	<i>Dried</i>
Calories	80	274
Moisture	77.5-86.8g	23.0g
Protein	1.2-1.3g	4.3g
Fat	0.14-0.30g	1.3g
Carbohydrates	17.1-20.3g	69.1g
Fiber	1.2-2.2 g	5.6 g
Ash	0.48 0.85 g	2.3 g
Calcium	35-78.2 mg	126 mg
Phosphorus	22-32.9 mg	77 mg
Iron	0.6-4.09 mg	3.0 mg
Sodium	2.0 mg	34 mg
Potassium	194 mg	640 mg
Carotene	0.013-0.195 mg	—
as Vitamin A	20-270 I.U.	80 I.U.
Thiamine	0.034-0.06 mg	0.10 mg
Riboflavin	0.053-0.079 mg	0.10 mg
Niacin	0.32-0.412 mg	0.7 mg
Ascorbic Acid	12.2-17.6 mg	0 mg
Citric Acid	0.10-0.44 mg	
Note: There are small amounts of malic, boric and oxalic acids.		
*According to analyses made in India, Hawaii, Central America, and by the U.S. Department of Agriculture in Washington, D.C		

Annex E (informative)

Fig — Codex, EU and USA pesticide residue limits

Users are advised that international regulations and permissible Maximum Residue Levels (MRL) frequently change. Although this International MRL Database is updated frequently, the information in it may not be completely up-to-date or error free. Additionally, commodity nomenclature and residue definitions vary between countries, and country policies regarding deferral to international standards are not always transparent. This database is intended to be an initial reference source only, and users must verify any information obtained from it with knowledgeable parties in the market of interest prior to the sale or shipment of any products. The developers of this database are not liable for any damages, in whole or in part, caused by or arising in any way from user's use of the database.

Results Key

MRL values in *{Italics}* are more restrictive than US

--- indicates no MRL value is established.

Cod, EU, etc. indicates the source of the MRL and EXP means the market defers to the exporting market.

All numeric values listed are in parts per million (ppm), unless otherwise noted

	US	Cod	EU 1
Carfentrazone-ethyl	0.1	---	<i>{0.01}</i>
	1. European Union does not maintain a specific MRL for the Carfentrazone-ethyl/Fig combination, but does maintain an MRL of 0.01 PPM for its "Fruit Fresh or Frozen; Nuts" group.		
	US	Cod	EU 2
Chlorpyrifos	0.01	---	0.05
	2. European Union does not maintain a specific MRL for the Chlorpyrifos/Fig combination, but does maintain an MRL of 0.05 PPM for its "Edible peel" group.		
	US	Cod	EU 3
Diazinon	0.5	---	<i>{0.01}</i>
	3. European Union does not maintain a specific MRL for the Diazinon/Fig combination, but does maintain an MRL of 0.01 PPM for its "Edible peel" group.		
	US	Cod	EU
Glyphosate	0.2	---	<i>{0.1}</i>
	US	Cod	EU 4
Malathion	8	---	<i>{0.02}</i>
	4. European Union does not maintain a specific MRL for the Malathion/Fig combination, but does maintain an MRL of 0.02 PPM for its "Miscellaneous fruit" group.		
	US	Cod	EU
Maneb	7	---	<i>{0.05}</i>
	US	Cod	EU 5
Oryzalin	0.05	---	<i>{0.01}</i>
	5. European Union does not maintain a specific MRL for the Oryzalin/Fig combination, but does maintain an MRL of 0.01 PPM for its "Miscellaneous fruit" group.		
	US	Cod	EU
Oxyfluorfen	0.05	---	0.05
	US	Cod	EU 6
Paraquat dichloride	0.05	---	<i>{0.02}</i>
	6. European Union does not maintain a specific MRL for the Paraquat dichloride/Fig combination, but does maintain an MRL of 0.02 PPM for its "Fruit Fresh or Frozen; Nuts" group.		
	US	Cod	EU
Piperonyl Butoxide	8	---	---
	US	Cod	EU
Propylene chlorohydrin	3	---	---

	US	Cod	EU
Propylene oxide	3	---	---
	US	Cod	EU 7
Pyrethrins	1	---	1
	7. European Union does not maintain a specific MRL for the Pyrethrins/Fig combination, but does maintain an MRL of 1 PPM for its "Fruit Fresh or Frozen; Nuts" group.		
	US	Cod	EU 8
Pyriproxyfen	0.3	---	{0.05}
	8. European Union does not maintain a specific MRL for the Pyriproxyfen/Fig combination, but does maintain an MRL of 0.05 PPM for its "Miscellaneous fruit" group.		
	US	Cod	EU 9
Spinetoram	0.1	---	{0.05}
	9. European Union does not maintain a specific MRL for the Spinetoram/Fig combination, but does maintain an MRL of 0.05 PPM for its "Miscellaneous fruit" group.		
	US	Cod	EU
Spinosad	0.1	---	{0.02}

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