

CODEX STANDARD FOR JAMS (FRUIT PRESERVES) AND JELLIES¹**CODEX STAN 79-1981****1. SCOPE**

1.1 This standard applies to a class of fruit spreads commonly known as jams and jellies and which may be prepared from single fruits or from two or more fruits.

1.2 The distinguishing characteristics of the product are:

- (a) a substantial amount of fruit ingredient is required in the formulation; and
- (b) the end product has a relatively high soluble solids value.

1.3 The terms "jams" and "preserves" are frequently used interchangeably. "Jellies" are differentiated from jams in that the fruit ingredient consists of the juice that has been extracted from whole fruits and clarified by filtration or other means.

1.4 This standard does not apply to:

- (a) Products prepared with non-carbohydrate sweeteners and which are clearly intended or labelled as intended for diabetic or dietetic use; or
- (b) Products with a low sugar content; or
- (c) Products prepared from citrus fruit, commonly referred to as marmalade, which products are covered by the "Codex Recommended International Standard for Citrus Marmalade" (CODEX STAN 80-1981); or
- (d) Products clearly intended and marked as for manufacturing use.

2. DESCRIPTION**2.1 Product Definitions**

2.1.1 "Jam" or "Preserve" or "Conserve" is the product prepared from a suitable fruit ingredient (as defined in 2.2.2.1):

- (a) which may be whole fruit, pieces of fruit, fruit pulp, or fruit puree; and
- (b) with or without fruit juice or concentrated fruit juice as optional ingredient(s); and
- (c) mixed with a carbohydrate sweetener, with or without water; and
- (d) processed to a suitable consistency.

2.1.2 "Jelly" is the product prepared from a suitable fruit ingredient (as defined in 2.2.2.2):

- (a) which is practically free from suspended fruit particles; and

¹ Formerly CAC/RS 79-1976.

- (b) mixed with a carbohydrate sweetener, with or without water; and
- (c) processed to a semi-solid consistency.

2.2 Other Definitions

2.2.1 "Fruit" means all of the recognized fruits and those vegetables recognized as suitable in making jams, including but not limited to chestnuts, ginger, melon, rhubarb, tomato.

2.2.2 "Fruit ingredient" means:

2.2.2.1 In the case of jams, preserves or conserves the product:

- (a) prepared from fruit which is fresh, frozen, canned, concentrated or otherwise processed or preserved; and
- (b) prepared from fruit which is substantially sound, wholesome, of suitable ripeness and clean; not deprived of any of its main constituents, except that it is trimmed, sorted and otherwise treated to remove objectionable bruises, stems, toppings, tailings, cores, pits (stones), and may or may not be peeled. In the case of ginger, rhubarb, and melon, it means respectively the drained edible and cleaned root of ginger (*Zingiber officinale*) preserved in syrup, trimmed rhubarb stems, and melons with seeds, stem, and rind removed; and
- (c) containing all natural soluble solids (extractives) except for those lost during preparation under good manufacturing practices.

2.2.2.2 In the case of jelly the juice or aqueous extract:

- (a) obtained from fruit which is fresh, frozen, canned, concentrated, or otherwise processed or preserved; and
- (b) prepared from fruit which is substantially sound, wholesome, clean, and which is trimmed, sorted and otherwise treated to remove objectionable material; and
- (c) prepared by removal of all, or practically all, of the insoluble solids and may be concentrated by the removal of water.

2.2.3 "Fruit Pulp" means the edible portions of the fruit, mashed, or cut into pieces, but not reduced to a puree.

2.2.4 "Fruit Puree" means fruit ingredient finely divided by sieving, screening, or other mechanical means.

2.2.5 "Soluble Solids" means percent by weight of soluble solids as determined by the refractometric method corrected to 20°C using the International Sucrose Scale but making no correction for insoluble solids or acids.

3. ESSENTIAL COMPOSITION AND QUALITY CRITERIA

3.1 Composition

3.1.1 Basic Ingredients

- (1) Fruit ingredient as defined in 2.2.2.
- (2) One or more of the carbohydrate sweetener(s) (sugar(s)) defined by the Codex Alimentarius Commission, including sucrose, dextrose, invert sugar, invert sugar syrup, fructose, glucose syrup, dried glucose syrup.

3.1.2 Optional Ingredients

- (1) Citrus juice.
- (2) Herbs, spices (including powdered ginger) and vinegar.
- (3) Essential oils.
- (4) Spirituous liquors.
- (5) Butter, margarine, other edible vegetable or animal oils (used as anti-foaming agents).
- (6) Honey.
- (7) Fruit juice or fruit juice concentrates in the case of jams. In Labrusca grape jam, grape juice and grape juice concentrate may constitute a part of the required fruit content.

3.2 Formulation

3.2.1 Fruit Content

3.2.1.1 Specification A

The product shall be manufactured from not less than 45 parts, by weight, of original fruit ingredient, exclusive of any added sugar or optional ingredients for each 100 parts, by weight, of finished product except for the following:

Blackcurrant, rosehip, quince	35 parts
Ginger	25 parts
Cashew apple	23 parts
Passionfruit	8 parts

When concentrated or diluted fruit ingredient is used, the formulation is based upon the equivalent of single strength fruits as determined by the relationship between the soluble solids of the concentrate or the dilution and the soluble solids of the natural (single strength) fruit.

3.2.1.2 Specification B

The product shall be manufactured from not less than 33 parts, by weight, of original fruit ingredient, exclusive of any added sugar or optional ingredients used in the preparation of the fruit ingredient, for each 100 parts, by weight, of finished product except for the following:

blackcurrant, rosehip, quince	25 parts
ginger	15 parts
cashew apple	16 parts
passionfruit	6 parts

When concentrated or diluted fruit ingredient is used, the formulation is based upon the equivalent of single strength fruits as determined by the relationship between the soluble solids of the concentrate or the dilution and the soluble solids of the natural (single strength) fruit.

3.2.2 Mixtures of fruits

3.2.2.1 Two fruits

When a jam or jelly contains a mixture of two fruits, the first-named fruit shall contribute not less than 50 percent, nor more than 75 percent, of the total fruit content except when melon, passionfruit, lemon, papaya, or ginger is one of the two fruits. When melon or papaya is a constituent it may be present up to a level of 95 percent and where pineapple, passionfruit, lemon, and ginger are present they shall be present at a level of not less than 5 percent with the major ingredient being permitted at a level greater than 75 percent.

3.2.2.2 Three fruits

When a jam or jelly contains a mixture of three fruits, the first-named fruit shall contribute not less than 33 _ percent, nor more than 75 percent of the total fruit content.

3.2.2.3 Four or more fruits

When a jam or jelly contains a mixture of four or more fruits, the first-named shall contribute not less than 25 percent nor more than 75 percent, of the total fruit content.

3.3 Soluble solids (finished product)

The soluble solids value of the finished product shall not be less than 65 percent.

3.4. Quality criteria

3.4.1 General requirements

The end product shall be viscous or semi-solid, have a colour and flavour normal for the type or kind of fruit ingredient taking into consideration any flavour imparted by optional ingredients. Characteristic colour shall not, however, be a requirement where the colour of the product has been adjusted by the use of permitted colouring agents. It shall be reasonably free from defective materials normally associated with the fruits.

In the case of jellies, the product shall be at least reasonably clear or transparent and shall contain no apparent defects.

Seeds, in the case of berries and passionfruit, are a natural fruit component and are not considered defects unless the product is presented as "Seedless".

3.4.2 Defects and allowances - Jams (Preserves)

Based on a sample unit of 450 g the product shall have not more than the following:

- | | | |
|-----|---|------------------------------------|
| (a) | Harmless extraneous plant material
(consisting of plant material common to the specific fruit and includes leaves, full caps, stems over 10 mm in length and sepal bracts aggregating an area of 5 mm ² or larger) | 2 pieces |
| (b) | Pit (Stone) (whole pit or stone in fruits such as cherries that are normally pitted; or a piece of pit of approximately one-half pit) | 1 piece |
| (c) | Pit fragments (a piece of pit less than the equivalent of one-half pit and which weighs at least 5 milligrammes) | 2 pieces |
| (d) | Damaged (a piece of fruit that is blemished, discoloured, or bruised by pathological or other means to the extent that it is materially affected) | 5 pieces |
| (e) | Mineral impurities
Strawberry jam
Other | 0.04% by weight
0.01% by weight |

3.4.3 Classification of "defectives"

A container that fails to meet one or more of the applicable quality requirements, as set out in sub-sections 3.4.1 and 3.4.2 shall be considered a "defective".

3.4.4 Lot Acceptance

A lot will be considered as meeting the applicable quality requirements referred to in sub-section 3.4.1 when the number of "defectives", as defined in sub-section 3.4.3, does not exceed the acceptance number (c) of the appropriate sampling plan (AQL-6.5 in the Joint FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (CAC/RM 42-1969) (See Codex Alimentarius Volume 13).

4. FOOD ADDITIVES

4.1 Acidifying and pH Regulating Agents

		Maximum level
4.1.1	Citric acid)	In sufficient amount to maintain
4.1.2	Malic acid)	the pH at a level of 2.8-3.5
4.1.3	Lactic acid)	

	Maximum level
4.1.4 L-tartaric acid)	
4.1.5 Fumaric acid)	
4.1.6 Sodium, potassium and calcium salts of any)	L-tartaric acid and fumaric acid
and)	
of the acids listed in 4.1.1 through 4.1.5)	their salts expressed as the acid, 3
g/kg)	
4.1.7 Sodium and potassium carbonates)	
4.1.8 Sodium and potassium bicarbonates)	
4.2 Anti-foaming Agents	
4.2.1 Mono- and diglycerides of fatty acids)	Not more than is necessary to inhibit
of edible oils)	foaming
4.2.2 Dimethyl polysiloxane)	10 mg/kg
4.3 Thickening Agents	
4.3.1 Pectins)	Limited by GMP
4.4 Colours	
4.4.1 Erythrosine 45430)	
4.4.2 Amaranth 16184)	
4.4.3 Fast Green FCF 42053)	
4.4.4 Ponceau 4R 16255)	
4.4.5 Tartrazine 19140)	
4.4.6 Sunset Yellow FCF 15985)	
4.4.7 Brilliant Blue FCF 42090)	
4.4.8 Indigo Carmine (Indigotin) 73015)	
4.4.9 Caramel colours (not made by the)	200 mg/kg singly or in combination
Ammonia Sulphite process))	
4.4.10 Caramel colours (made by the)	
Ammonia Sulphite process))	
4.4.11 Chlorophylls 75810)	
4.4.12 Beta-apo-8'-carotenal 40820)	
4.4.13 Ethyl ester of beta-apo-8'-)	
carotenoic acid 40825)	
4.4.14 Canthaxanthine)	
4.5 Preservatives	
4.5.1 Sodium benzoate)	
4.5.2 Sorbic acid and potassium salt)	1 g/kg, singly or in combination
4.5.3 Esters of parahydroxy benzoic acid ¹)	
4.5.4 Sulphur dioxide (as a carryover)	
from raw material))	100 mg/kg - based on the end product
4.6 Flavours	

¹ Methyl, ethyl and propyl esters.

- 4.6.1 Natural fruit essences of the) Limited by GMP
named fruit(s) in the product)

Maximum level

- 4.6.2 Natural mint flavour)
4.6.3 Natural cinnamon flavour) Limited by GMP
4.6.4 Vanilla and vanillin (in)
chestnut preserves only))

4.7 Firming Agents (for use only on the fruit)

- 4.7.1 Calcium bisulphite)
4.7.2 Calcium carbonate) 200 mg/kg expressed as Ca, singly
4.7.3 Calcium chloride) or in combination
4.7.4 Calcium lactate)
4.7.5 Calcium gluconate)

4.8 Antioxidant

- 4.8.1 L-ascorbic acid - generally 500 mg/kg
4.8.2 L-ascorbic acid in blackcurrant jam 750 mg/kg

5. CONTAMINANTS

- Lead (Pb) 1 mg/kg
Tin (Sn) 250 mg/kg calculated as Sn

6. HYGIENE

6.1 It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 2 (1985) Codex Alimentarius Volume 1), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to this product.

6.2 To the extent possible in Good Manufacturing Practice, the product shall be free from objectionable matter.

6.3 When tested by appropriate methods of sampling and examination, the product:

- shall be free from microorganisms in amounts which may represent a hazard to health;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

7. WEIGHTS AND MEASURES**7.1 Fill of container**

7.1.1 Minimum fill

The container shall be well filled with the product. When packed in rigid containers, the product shall occupy not less than 90% of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled (see Method for Determination of Water Capacity of Containers, Codex Alimentarius Volume 13).

7.1.2 Classification of "defectives"

A container that fails to meet the requirement for minimum fill (90 percent container capacity) of 7.1.1 shall be considered a "defective".

7.1.3 Lot Acceptance

A lot will be considered as meeting the requirement of 7.1.1 when the number of "defectives" does not exceed the acceptance number (c) of the appropriate sampling plan (AQL-6.5) in the Joint FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (CAC/RM 42-1969) (See Codex Alimentarius Volume 13).

8. LABELLING

In addition to the requirements of the General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985 (Rev. 1-1991) Codex Alimentarius Volume 1), the following specific provisions apply:

8.1 The Name of the Food

8.1.1 The name of the product shall be:

(a) with respect to Specification A:

Extra Jam)	
or High Fruit Jam)	(or Jelly, Preserve or Conserve as appropriate)
or Jam)	

(b) with respect to Specification B:

Low Fruit Jam)	
or Light Jam)	(or Jelly, Preserve or Conserve as appropriate)
or Jam)	
or Fruit Spread)	

8.1.2 The name of the product may be:

(a) "Crème" for products made from chestnuts.

(b) When any ingredient has been added which imparts to the food the distinctive flavour of the ingredient, the name of the food shall be accompanied by the term "flavoured with X" or "X flavoured", as appropriate. In the case of apple jelly that is coloured green and flavoured with mint, the traditional name "Mint Jelly" may be used.

8.1.3 In all cases the name of the product shall be accompanied by a statement on the label showing the parts of fruit ingredient used in the preparation of 100 parts of finished product. In the case of products with soluble solids levels below 65%, the word "Jam (Preserve, Conserve or Jelly)" may, in accordance with the law and custom of the country in which the product is sold, be included in the name provided that the name includes appropriate words other than "Jam (Preserve, Conserve or Jelly)" and the name of the fruit or fruits.

8.1.4 The name of the product shall be preceded or followed by the name of the fruit, or fruits, used in order of proportion by weight.

8.1.5 The name of the product may include the name of the variety of fruit (e.g. Victoria Plum Jam or type descriptions (e.g. Yellow Plum Jam).

8.1.6 The name of the product or fruit may include an adjective describing the character (e.g. Seedless Blackberry Jam).

8.1.7 Jam made from ginger, or pineapple, or figs, with or without the addition of citrus fruit, may be designated "Ginger Marmalade", "Pineapple Marmalade", or "Fig Marmalade" if such product is customarily so described in the country in which it is sold.

8.2 List of Ingredients

8.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with the General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1981 (Rev. 1-1991) Codex Alimentarius Volume 1).

8.2.2 If ascorbic acid is added to preserve colour, its presence shall be declared in the list of ingredients as ascorbic acid.

9. METHODS OF ANALYSIS AND SAMPLING

See Codex Alimentarius Volume 13.