



DRAFT TANZANIA STANDARD

Fresh strawberries - Specification

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TANZANIA BUREAU OF STANDARD

0. Foreword

Strawberry (*Fragaria spp*) is a native temperate fruit of the Rosaceae family; but some varieties can be cultivated in tropical and subtropical climate. The fruit is characterized by its aroma, bright red color, juicy texture, and sweetness. It is consumed either fresh or processed into food products such as jam, juice, pies, dairy products. They are good source of minerals (manganese and potassium) and antioxidant including vitamins C and folate.

This Tanzania Standard was prepared to provide guidance to producers, traders of fresh strawberries and regulators to act as a means for ensuring the safety and quality of the produces.

In the preparation of this Tanzania Standard considerable assistance was derived from:

UNECE STANDARD FFV-35:2021, *Marketing and commercial quality control of strawberries*

In reporting the results of a test or analysis made in accordance with this Tanzania Standard, if the final value observed or calculated is to be rounded off, it shall be done in accordance with TZS 4 (see clause 2).

1 Scope

This standard specifies the requirement, methods of sampling and test of strawberries of varieties (cultivars) grown from the genus *Fragaria* to be supplied fresh to the consumer, strawberries for industrial processing being excluded.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

- a) TZS 4, *Rounding off numerical values*
- b) TZS 109, *Food processing units — Code of hygiene*
- c) TZS 122, *Microbiology of food and feeding stuffs — Horizontal method for detection of Salmonella spp.*
- d) TZS 131, *Microbiology — General guidance for the enumeration of yeast and mould — Colony count technique at 25 °C*
- e) TZS 538, *Pre -packaged food labeling - general requirements*
- f) TZS 729, *Microbiology of food and animal feeding stuffs -Horizontal method for the enumeration of coliforms - Colony count technique*

- g) *TZS 730-2, Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of -b-glucuronidase-positive Escheria coli - Part 2 - Colony-count technique at 44°C using 5-bromo-4-chloro-3-indolyl-b-D-glucuronide*
- h) *TZS 852-1, Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of Listeria monocytogenes - Part 1 - Detection method*
- i) *TZS 1003, Guide to the prepacking of fruits and vegetables*
- j) *TZS 1743, National standard for good agricultural practices (gap) and good handling practices for fresh fruits and vegetables*
- k) *Codex stan 193 General Standard for Contaminants and Toxins in Food and Feed*
- l) *Codex pesticide residues in food online data base*

3. Terms and definitions

For the purpose of this standard the following terms and definitions apply.

3.1 damage

any defect or any combination of defects, which materially detracts from the appearance, or the edible or shipping quality of the strawberries

3.2 diameter

the greatest dimension measured at right angles to a straight line running from the stem to the apex

3.3 intact

no part (s) removed and not suffered any damage

3.4 sound

produce not affected by rotting or deterioration such as to make it unfit for consumption

3.5 clean

practically free of any visible foreign matter

3.6 fresh

firm/not soft, not flabby or shriveled and free from blemishes

4 Requirements

4.1 General requirements

4.1.1 In all classes, subject to the special provisions for each class and the tolerances allowed, the strawberries shall be:

- a) intact;
- b) sound;
- c) clean;

- d) fresh in appearance, but not washed;
- e) practically free from pests and damage caused by them;
- f) with the calyx (except in the case of wood strawberries); the calyx and the stalk (if present) shall be fresh;
- g) free of abnormal external moisture; and
- h) free of any foreign smell and/or taste.

4.1.2 The development and the condition of strawberries shall be such as to enable them:

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

4.2 Specific requirements

4.2.1 Classification

The strawberries are classified in three classes as defined below:

4.2.1.1 "Extra" Class

The strawberries in this class shall be of superior quality. They shall be characteristic of the variety.

They shall be bright in appearance, allowing for the characteristics of the variety. They shall be free from soil.

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

4.2.1.2 Class I

Strawberries in this class shall be of good quality. In colouring and shape, they shall be characteristic of the variety.

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

- a) slight defects of shape;
- b) presence of a small white patch, not exceeding one-tenth of the total surface area of the fruit; and
- c) slight superficial pressure marks.

They shall be practically free from soil.

4.2.1.3 Class II

This class includes strawberries which do not qualify for inclusion in the higher classes, but satisfy the general requirements specified above.

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

- a) defects in shape;
- b) a white patch, not exceeding one fifth of the total surface area of the fruit;
- c) slight dry bruising not likely to spread; and

They may have slight traces of soil.

4.2.2 Sizing

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

Strawberries shall be of the following minimum sizes:

- a) "Extra" Class : 25 mm;
- b) Classes I and II: 18 mm;

There is no minimum size for wood strawberries

4.2.3 Tolerances

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

4.2.3.1 Quality tolerances

4.2.3.1.1 "Extra" Class

A total tolerance of 5 per cent, by number or weight, of strawberries not satisfying the requirements of the class but meeting those of Class I is allowed. Within this tolerance not more than 0.5 percent in total may consist of produce satisfying the requirements of Class II quality.

4.2.3.1.2 Class I

A total tolerance of 10 per cent, by number or weight, of strawberries not satisfying the requirements of the class but meeting those of Class II is allowed. Within this tolerance not more than 2 per cent in total may consist of produce satisfying neither the requirements of Class II quality nor the general requirements, or of produce affected by decay.

4.2.3.1.3 Class II

A total tolerance of 10 per cent, by number or weight, of strawberries satisfying neither the requirements of the class nor the general requirements is allowed. Within this tolerance not more than 2 per cent in total may consist of produce affected by decay.

4.2.3.2 Size tolerances

For all classes: a total tolerance of 10 per cent, by number or weight, of strawberries not satisfying the requirements as regards the minimum size is allowed.

4.2.4 Presentation

4.2.4.1 Uniformity

The contents of each package shall be uniform and contain only strawberries of the same origin, variety and quality.

In Class “Extra”, strawberries, with the exception of wood strawberries, shall be particularly uniform and regular with respect to degree of ripeness, colour and size. In Class I, strawberries may be less uniform in size.

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

6 Hygiene

6.1 It is recommended that the produce covered by the provisions of TZS 109 and TZS 1743 (see clause 2).

6.2 Strawberries shall also comply with the microbiological requirements specified in Table 1.

Table 1 - Microbiological requirements for strawberries

Characteristic	Requirement	Test method
Coliforms cfu/g, max	10 ²	TZS 729
<i>Escherichia coli</i> , cfu/g	Absent	TZS 730-2
<i>Salmonella</i> spp/25 g	Absent	TZS 122
Yeast and moulds, cfu/g , max	10 ²	TZS 131
<i>Listeria monocytogenes</i> /25g	Absent	TZS 852-1

7 Contaminants

7.1 Heavy metals

Strawberries shall comply with the maximum levels of metal contaminants established by the Codex Stan 193.

7.2 Pesticide residues

Strawberries shall comply with those maximum residue limits established in the Codex pesticide residues in food online data base.

8 Sampling and tests

8.1 Sampling

Representative samples of the produce shall be drawn as prescribed in TZS 1002 (see clause 2).

8.2 Tests

Tests shall be done in accordance with the methods referred in this standard.

9. Packing, marking and labelling

The produce shall also be packed in accordance with TZS 1003 (See clause 2).

9.1 Packing

Strawberries shall be packed in such a way as to protect the produce properly.

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

Packages shall be free of all foreign matter.

9.1.1 The containers shall meet the quality, hygiene, ventilation and resistance characteristics that shall ensure suitable handling, shipping and preserving the produce. Packages (or lot for produce presented in bulk) shall be free of foreign matter and objectionable smell.

9.1.2 The use of any substance tending to modify the natural characteristics of the produce, especially form, texture and taste shall be prohibited.

9.2 Marking and labelling

9.2.1 In addition to the requirements of the TZS 538; each package shall legibly and indelibly bear the following information:

- a) Name of the produce; "Fresh strawberries"
- b) Name and address of exporter/importer, packer and/or dispatcher;
- c) Country of origin;
- d) Class;
- e) Identification code and/or batch number;
- f) Storage instructions;
- g) Pack date;
- h) Net weight and

- i) Size (optional)

9.2.2 Certification mark – Each container may also be marked with TBS certification mark.

NOTE: The use of TBS certification mark is governed by provisions of the Standards Act, 2009. Details of the conditions under which a license for the use of TBS certification mark may be granted to manufacturers or producers, may be obtained from TBS.

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