



## DRAFT TANZANIA STANDARD

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### Apple juice — Specification

FOR STAKEHOLDERS' COMMENTS ONLY



# Apple juice — Specification

## 0 Foreword

Apple juice is a sweet, light yellow to golden coloured liquid obtained by maceration and pressing of ripe apple fruits. The juice is normally valued for its vitamin C content which normally gets lost during processing.

This Tanzania Standard was prepared to safe guard the consumer and to guide manufacturers, traders and regulators for safe and quality

In the preparation of this Tanzania Standard assistance was derived from: TZS 1194:2015 Apple juice — Specification

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 Tanzania Standard prescribes the requirements, methods of sampling and tests for apple juice extracted from an apple fruit *Malus domestica* Borkh (synonymous *Pyrus malus* (L). intended for direct human consumption.

## 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.

*TZS 163, Fruits and Vegetables — Sampling*

*TZS 1496, Fruits and Vegetables — Determination of soluble solids*

*TZS 570, Determination of organic acids in fruits juices*

*TZS 1504, Fruits and Vegetables — Determination of ethanol content*

*TZS 1498, Fruits and Vegetables — Determination of ascorbic acid*

*TZS 4, Rounding off numerical values*

*TZS 731 Microbiology of food and feeding stuffs-Horizontal method for detection and enumeration of presumptive Escherichia coli*

*TZS 113:2015 Code of hygienic practice for processed fruit and vegetable products*

Codex Stan 192, Food additives — Schedule

TZS 163, Fruits and vegetables — sampling and tests

TZS 118, Food stuff — General guidance for enumeration of micro organisms — Colony count technique at 30 °C

TZS 122, Microbiology of food and feeding stuff-Horizontal method for detection of *Salmonella* spp

TZS 131, Microbiology — General guidance for enumeration of yeast and mould — Colony count technique at 25 °C.

TZS 538, Packaging and labelling of fo

TZS 1492, Fruits and Vegetables — Determination of tin content

TZS 268- General atomic absorption spectrophotometric method for determination of lead in food stuffs

TZS 789/EAS 12, Drinking (potable) water — Specification

TZS 1581-1, Determination of cadmium content – Method graphite furnace atomic absorption spectrometry

TZS 1581-2, Determination of cadmium content – Method flame atomic absorption spectrometry

### **3 Terms and definitions**

For the purpose of this Tanzania Standard the following definitions shall apply:

#### **3.1 apple juice**

Unfermented but fermentable juice intended for direct consumption, obtained by mechanical process of sound ripe apples *Malus domestica* Borkh.

#### **3.2 defects**

particles of skins, stems, fibrous matters and other plant tissues or any other foreign material

### **4 Requirement**

#### **4.1 General requirements**

4.1.1 Apple juice shall be obtained by mechanical processing of ripe apple fruits. The juice shall be clean with golden or light yellow colorations. The juice may have been concentrated and later reconstituted with potable water conform to TZS 789 for the purpose of maintaining the essential composition and quality factors of the juice.

4.1.2 Apple juice shall have characteristic colour, flavor and aroma and shall not show any sign of fermentation.

4.1.3 Apple juice shall be free from defects (see 3.2).

#### **4.2 Specific requirements**

Apple juice shall conform to the physical and chemical requirements given in Table 1.

**Table 1 — Physical and chemical requirements for apple juice**

| S/No | Characteristic  | Requirements | Test method<br>(see clause 2) |
|------|---|--------------|-------------------------------|
| i    | Soluble solids,% by mass, read as brix at 20 °C, min. | 11.5         | TZS 1496                      |
| ii   | Total acidity, g/l, max.                              | 0.8          | TZS 570                       |
| iii  | Ethanol % by mass, max.                               | 0.3          | TZS 1504                      |
| iv   | Ascorbic acid % by mass, min.                         | 0.3          | TZS 1498                      |

#### 4.5 Food additives

food additives permitted shall be used in accordance with Codex Stan 192 (see clause 2)

### 5 Contaminants

5.1 Apple juice shall not contain metal contaminants in excess of the quantities specified in Table 2.

**Table 2 — Limits for metal contaminants in apple juice**

| Heavy metals  | Maximum<br>mg/kg | Test method   |
|---------------|------------------|---------------|
| Arsenic (As ) | 0.2              | TZS 1502/     |
| Lead (Pb)     | 0.03             | TZS 963-3/    |
| Tin (Sn)      | 250              | TZS 1492      |
| Cadmium (Cd)  | 0.05             | TZS 1581-1/2, |

5.2 The maximum allowable pesticide residue limit in apple juice shall be as prescribed in the Codex.

### 6 Hygiene

6.1 Apple juice shall be prepared under hygienic conditions in accordance with TZS 113 (see clause 2).

**6.2 Microbiological limits** – Apple juice shall be free from pathogenic microorganisms or their toxic derivatives such as patulin and shall comply with the microbiological limits provided in Table 3.

**Table 3 — Microbiological limits for apple juice**

| S/No | Type of microorganism              | Requirements | Test method<br>(see clause 2) |
|------|------------------------------------|--------------|-------------------------------|
| i    | Total viable count, cfu/ml,<br>Max | 10           | TZS 118                       |
| ii   | Yeast and moulds, cfu/ml           | absent       | TZS 131                       |
| iii  | <i>Escherichia coli</i> , MPN/ml   | absent       | TZS 731                       |

## 7 Sampling and test methods

7.1 For the purpose of this Tanzania Standard sampling of apple juice shall be done in accordance with TZS 163 (see clause 2).

7.2 Apple juice shall be tested for ascertaining conformity of the product to the requirements in this Tanzania Standard by the methods given in the respective tables of this Tanzania Standard.

## 8 Packing, marking and labelling

### 8.1 Packing

8.1.1 Apple juice shall be packed in suitable food grade containers.

8.1.2 Containers shall be airtight and shall be provided with tamper proof seals and closures. Containers shall preclude contamination with or proliferation of microorganisms in the product during storage and transportation.

8.1.2 The head space of each container shall be 10 % of the fill

### 8.2 Marking and labelling

8.2.1 Apple juice shall also be packed and labelled in accordance with the requirements prescribed in TZS 538 (see clause 2). In addition Each container shall be visibly and indelibly labelled or marked with the following particulars:

- a) name of the product;
- b) name, physical and postal address of the manufacturer or packer;
- c) country of origin;
- d) date of manufacture and expiry date;
- e) list of ingredients;
- f) net volume;
- g) storage condition;
- h) batch number in code or in clear; and
- i) brand name or trade mark, if any.

**8.2.3** Containers may also be marked with TBS Certification Mark of Quality.

NOTE — The TBS Standards Mark of Quality may be used by manufacturers only under license from TBS. Particulars of conditions under which the license is granted can be obtained from TBS.

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