DRAFT TANZANIA STANDARD

FRUIT - SQUASHES – SPECIFICATION
Fruit squashes – Specification

0. FOREWORD

Fruit squashes which are sometime referred as cordial are among the fruit based soft drink beverages manufactured in the country and some being imported; normally sold in concentrated form and consumed after dilution with potable water. In order to ensure that the product conforms to safety and quality requirement it was necessary to prepare this Tanzania Standard so as to safeguard the consumer.

In reporting the results of test or analyses made in accordance with this 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 specifies the requirements, methods of sampling and test for fruit squashes intended for human consumption.

2 Normative References

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

TZS 4: 2009, Rounding off numerical values
TZS 163: 2012, Fruits and vegetables – Sampling
TZS 1492:2016 / ISO 2447-1998 Fruit and vegetable products — Determination of tin content


TZS 1488:2016, Fruit and vegetable products — Determination of titratable acidity


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

Codex stan 192 Permitted food additives

TZS 131:2010 ISO 21527-2 Microbiology – General guidance for enumeration of yeast and mould – Colony count technique at 25 °C

TZS 118:2018(1st Ed) ISO 4833-1:2003 - Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms Part 2: Colony count at 30 degrees C by the pour plate technique

TZS 268:2017(2nd Ed) General atomic absorption spectrophotometric method for determination of lead in food and food stuffs

TZS 538:2015-EAS 38:2014 Labelling of pre-packaged foods — General requirements

731:2018(3rd Ed) TZS Microbiology of food and feeding-stuffs – Horizontal method for the detection and enumeration of presumptive Escherichia Coli – Most Probable Number Technique


AOAC 974.21:2000(17th Ed) Mercury in food flameless Atomic absorption method

3 Terms and definitions
For the purpose of this Tanzania Standard, the following definitions shall apply:-

3.1 Defects
Particles of membrane, core, skin, seed or any other foreign material.
3.2 Fruit squash

It is a homogenous sweetened beverage prepared from fruit juice(s), either of single strength and / or concentrated, and preserved or other wise, mixed with sugar, potable water and various other ingredients in such proportions that will meet the requirements given in this standard.

3.3 Potable water

is water that is safe to drink or to use for food preparation, without risk of health problems. (treated potable water and natural potable water).

3.4 Define soft drink beverage

any of a class of nonalcoholic beverages, usually but not necessarily carbonated, normally containing a natural or artificial sweetening agent, edible acids, natural or artificial flavours, and sometimes juice.

4 Requirements

4.1 General requirements

4.1.1 Basic raw material

4.1.1.1 The fruit squash shall be prepared from either a mixture or a specific fruit concentrate of fresh, sound pulp(s) or juice(s) obtained from ripe fruits harvested at proper stage of maturity. The fruits used shall be free from any signs or fermentation or bacterial or as a result of fungal growth.
4.1.1.2 The fruit juice and /or pulp content in the squashes shall not be less than 25 % by mass, with exception of lime and lemon squashes which shall have a fruit content of not less than 20 %.
4.1.1.3 The fruit squash shall possess a good body, uniform colour. Shall be free from defects and shall possess the characteristic flavor.

4.1.2 Other raw materials

Other substances that may be added to the pulp(s) or juice(s) are sucrose, glucose and / or other carbohydrate sweeteners and potable water.

NOTE: No artificial sweetening agents shall be used in preparation of fruit squashes.

4.3 Additives

4.3.1 Use of food additives shall be as per codex Stan 192 (see clause 2).

4.3.2 Fruit squashes shall also conform to the chemical requirements prescribed in Table1.
Table 1 – Chemical requirement for fruit squashes

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Requirements</th>
<th>Method of test Refer (see clause 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble solids in Degree Brix at 20°C, percent mass by mass, ( \text{min.} )</td>
<td>40</td>
<td>TZS 1496:2016</td>
</tr>
<tr>
<td>Acidity as anhydrous citric acid per cent by mass, ( \text{min.} )</td>
<td>1.0</td>
<td>TZS 1488:2016</td>
</tr>
<tr>
<td>Ascorbic acid, per cent by mass, ( \text{min.} )</td>
<td>35</td>
<td>TZS 1498:2015</td>
</tr>
<tr>
<td>pH, ( \text{min.} )</td>
<td>2.9</td>
<td>TZS 1491:2015</td>
</tr>
</tbody>
</table>

Contaminants

Pesticides

5.2 Squashes shall comply with pesticides maximum residue limits (MRL) established by Codex stand 4.

4.4 Fruit squashes shall not contain any metallic contaminant in excess of the quantities specified in Table 2.

Table 2 – Limits for metallic contaminants in fruit squashes

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Maximum (mg/kg)</th>
<th>Method of test refer (see clause 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>0.2</td>
<td>TZS 1502: 2016</td>
</tr>
<tr>
<td>Tin</td>
<td>250</td>
<td>TZS 1492: 2016</td>
</tr>
<tr>
<td>Copper</td>
<td>5.0</td>
<td>TZS1495: 2016</td>
</tr>
<tr>
<td>Zinc</td>
<td>5.0</td>
<td>TZS 1500: 2016</td>
</tr>
<tr>
<td>Iron</td>
<td>15</td>
<td>TZS 1493: 2016</td>
</tr>
<tr>
<td>Lead</td>
<td>0.3</td>
<td>TZS 268: 201</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.1</td>
<td>AOAC 971.21:2000(17th Ed)</td>
</tr>
</tbody>
</table>
5 Hygiene

5.1 Fruit squashes shall be prepared under hygienic conditions in accordance with TZS 113 (see clause 2).

5.2 Microbiological limits

Fruit squashes shall be free from pathogenic organisms and shall comply with the microbiological limits provided in Table 3, when determined by the methods shown alongside the Table.

Table 3 — Microbiological limits for fruit squashes

<table>
<thead>
<tr>
<th>S/N</th>
<th>Type of micro-organism</th>
<th>Limits (number of count) maximum</th>
<th>Method of test</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Total viable counts, cfu/ml</td>
<td>$10^2$</td>
<td>TZS 113: 2017</td>
</tr>
<tr>
<td>ii</td>
<td>Yeasts and moulds, cfu/ml</td>
<td>10</td>
<td>TZS131: 2010</td>
</tr>
<tr>
<td>iii</td>
<td>Coliforms, cfu/g</td>
<td>Shall be absent</td>
<td>TZS 731: 2018</td>
</tr>
<tr>
<td>iv</td>
<td>Staphylococcus aureus</td>
<td>$10^2$</td>
<td>TZS 125/ISO 688-1</td>
</tr>
<tr>
<td>v</td>
<td>Salmonella spp</td>
<td>Not detected</td>
<td>TZS 122/ISO 6579-1</td>
</tr>
</tbody>
</table>

6 Sampling and tests

6.1 The method of drawing representative samples shall be done in accordance with TZS 163 (see clause 2).

6.2 Tests

The samples of fruit squashes shall also be tested for ascertaining conformity of the product to the requirements of each specification by the methods described in the respective standards provided under the relevant tables 1, 2 and 3 of this Tanzania Standard.

7 Packaging, marking and labelling

7.1 Packing

Squashes shall be packed in suitable food grade containers which are, hermetically sealed, moisture and pilfer proof. Where packaging is done in cans they shall be lacquered. The can shall have a plastic lid after the hermetic seal to ensure good hygienic conditions after opening the can during usage.
7.2 Marking and labelling

7.2.1 In addition to the provisions covered under TZS 538 (see clause 2) processed fruit squashes shall be legibly and indelibly marked on the label with the following information. Each container shall be labeled with the following particulars:

a) Name of product shall be “Fruit squash”, with a designation of the type of the fruit(s) as a major ingredient.
b) Name, physical and postal address of manufacturer and/or ........
c) Country of origin
d) Date of manufacture and expiry date
e) List of ingredients
f) Net content in millilitres or litres
g) Storage condition
h) Batch number in code or in clear.
i) Trade mark or brand; if any
j) Instruction for use

7.2.2 The containers may also be marked with TBS certification mark of quality.

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