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EAST AFRICAN STANDARD

Flavoured milk — Specification

EAST AFRICAN COMMUNITY

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Foreword

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

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. 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 principles and procedures for development of East African Standards. XXXXXX.

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.

The committee responsible for this document is Technical Committee *EASC/TC 017, Milk and milk products.*

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Flavoured milk— Specification

1 Scope

This Draft East African Standard specifies the requirements, sampling and test methods for flavoured milk for human consumption.

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.

AOAC 947.05, *Acidity of milk. Titrimetric method*

CX/MRL 2, *Maximum Residue Limits (Mrls) and Risk Management Recommendations (RMRs) for Residues of Veterinary Drugs in Foods*

CXC 57, *Code of hygienic practice for milk and milk products*

CXG 66, *Guidelines for the Use of Flavourings*

CXS 192, *General standard for food additives*

EAS 16, *Plantation (mill) white sugar — Specification*

EAS 38, *Labelling of pre-packaged foods — General requirements*

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 5, Refined white sugar — Specification

EAS 749, *Brown sugars — Specification*

EAS 770, *Fortified sugar — Specification*

EAS 8, *Raw cane sugar — Specification*

EAS 803, *Nutrition labelling — Requirements*

EAS 804, *Claims on foods — General requirements*

EAS 805, *Use of nutrition and health claims — Requirements*

EAS 948, *Fruit juices, puree, pulp and nectars — Specification*

ISO 11290-1, *Microbiology of the food chain—Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. —Part 1: Detection method*

ISO 11866-2, *Milk and milk products—Enumeration of presumptive Escherichia coli—Part 2: Colony-count technique at 44 degrees C using membranes*

ISO 14501, *Milk and milk powder — Determination of aflatoxin M1 content — Clean-up by immunoaffinity chromatography and determination by high-performance liquid chromatography*

ISO 19662, *Milk — Determination of fat content — Acido-butyrometric (Gerber method)*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 degrees C by the pour plate technique*

ISO 6579-1, *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.*

ISO 6731, *Milk, cream and evaporated milk — Determination of total solids content (Reference method)*

ISO 6888-1, *Microbiology of the food chain—Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) —Part 1: Method using Baird-Parker agar medium*

ISO 707, *Milk and milk products — Guidance on sampling*

ISO 8967, *Dried milk and dried milk products — Determination of bulk density*

ISO 8968-4, *Milk and milk products — Determination of nitrogen content — Part 4: Determination of protein and non-protein nitrogen content and true protein content calculation (Reference method)*

ISO/TS 6733, *Milk and milk products—Determination of lead content—Graphite furnace atomic absorption spectrometric method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
flavoured milk
milk that has been heat-treated and with added flavouring agents and/or other additives

3.2
Ultra High Temperature milk
milk that is treated under ultra-high temperatures, homogenized, filled and sealed aseptically into sterile retail containers in order to maintain commercial sterility under room temperatures

Note1 to entry: Commercial sterility is achieved by application of heat sufficient, alone or in combination with other appropriate treatment to render food free from microorganisms capable of growing in the food as normal non-refrigerated conditions at which the food is likely to be held during distribution and storage.

3.3
food grade packaging material
packaging material, made of substances which are safe and suitable for the intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

3.4
raw cow milk
normal, clean and fresh secretion extracted from the udder of a healthy cow

3.5
reconstituted milk
product resulting from the addition of water to the dried or concentrated form of the cow milk product in the amount necessary to re-establish the appropriate water to solids ratio

3.6
recombined milk
product resulting from the combining of milk fat and milk solids non-fat in their preserved forms with or without the addition of water to achieve the appropriate milk product composition

3.7
toned milk
Product prepared by a mixture of cow milk with skimmed milk or powdered milk in the amount necessary to re-establish the appropriate milk product composition

3.8
pasteurized milk
milk which has been subjected to heat treatment either by batch method, flash pasteurisation or High Temperature Short Time method (HTST)

3.9
foreign matter
any kind of undesirable physical material introduced to a food product at any point in its production, handling, processing or distribution

4 Categories of flavoured milk

Flavoured milk shall be categorized as follows based on fat content:

a) Whole/full cream;

b) Fat reduced/semi skimmed;

c) Low fat; and

d) Fat free/skimmed.

5 Requirements

5.1 Essential ingredients

5.1.1 Milk

The following milk and milk products, complying with relevant standards may be, used singly or in combination.

a) raw cow milk;

b) reconstituted milk;

c) recombined milk;

d) pasteurized milk; or

e) toned milk.

5.1.2 Flavours

Approved flavours (natural or synthetic) shall be used in accordance with CXG 66.

5.2 Optional ingredients

Other ingredients which may be used in the manufacture of flavoured milk include but are not limited to the following:

a) sugars complying with EAS 8, EAS 5, EAS 16, EAS 749, EAS 770; and

b) permitted fruit juices or their concentrates complying with EAS 948.

5.3 General requirements

Flavoured milk shall:

a) have characteristic texture, flavour and colour;

b) not have off-flavours and off odours;

c) be free from bitterness;

d) be free from metallic flavour;

e) be processed without affecting the composition of the product;

f) be free from visible sediments other than from the flavour used; and

g) be free from foreign matter.

5.4 Specific requirements

Flavoured milk shall comply with specific requirements given in Table 1 when tested in accordance with test methods specified therein.

Table 1 — Specific requirements for flavoured milk

S/N	Characteristic	Requirement				Test method
		Whole/full cream , min	Fat Reduced /semi skimmed	Low fat	Fat Free /skimmed, max	
1.	Milk fat, % (m/m)	3.25 (min.)	2.71-3.24	0.51-2.70	0.5 (max.)	ISO 19662
2.	Titratable acidity variation g, % lactic acid, max.	0.02	0.02	0.02	0.02	AOAC 947.05
3.	pH variation[a] max.	0.3	0.3	0.3	0.3	Annex A
4.	Milk Solids Non-Fat, %, min.	8.5	8.5	8.5	8.5	ISO 6731
5.	Density at 20 °C, g/ml	1.028-1.065	1.028-1.065	1.028-1.065	1.028-1.065	ISO 8967
6.	Protein content, %, min.	3	3	3	3	ISO 8968-4

[a] pH variation is only applicable to UHT Flavoured milk

6 Food additives

Food additives in flavoured milk may be used in accordance with CXS 192

7 Hygiene

7.1 Flavoured milk shall be prepared and handled in accordance with accordance with EAS 39 and CXC 57.

7.2 Flavoured milk shall comply with microbiological requirements given in Table 2 when tested in accordance with test methods specified therein.

Table 2 — Microbiological limits for flavoured milk

S/N	Micro-organisms	Maximum limit		Test method
		UHT Flavoured milk	Pasteurized flavoured milk	
i.	Total Plate count, CFU/ ml	10	10^4	ISO 4833-1
ii.	Total Coliform, CFU/ ml	< 1	10	ISO 4832
iii.	*Staphylococcus aureus* CFU/ ml	< 1	< 1	ISO 6888-1
iv.	*Salmonella spp,* in 25 ml	Absent	Absent	ISO 6579-1
i.	*Listeria monocytogenes* in 25 ml	N/A	Absent	ISO 11290-1
ii.	*Escherichia coli* CFU/ml	N/A	< 1	ISO 11866-2
N/A Not Applicable				

8 Contaminants

8.1 Pesticide residues

Flavoured milk shall comply with the maximum pesticides residue limits set by the Codex Alimentarius Commission

8.2 Veterinary drugs residues

Flavoured milk shall comply with maximum residue limits for antibiotics and other veterinary drugs set by Codex Alimentarius Commission in CX/MRL 2.

8.3 Aflatoxin

When tested in accordance with ISO 14501, the level of Aflatoxin M1 shall not exceed 0.5 µg/kg.

8.4 Heavy metals

The level of Lead (Pb) shall not exceed 0.02 mg/kg when tested in accordance with ISO/TS 6733.

9 Packaging

Flavoured milk shall be packaged in food grade packaging material that safeguards the quality, integrity and safety of the product.

10 Labelling

10.1 General labelling requirements

Each package of flavoured milk shall be legibly and indelibly labelled in accordance with the requirements stipulated in EAS 38 and shall also include the following:

a) name of the product as “UHT flavoured milk” or “pasteurized Flavoured milk”;

b) type of flavour used;

c) category of flavoured milk as “Whole /full cream; Fat Reduced /semi skimmed /low fat or Fat Free /skimmed”; and

d) fat content.

10.2 Nutritional labelling

Nutrition labelling shall be done in accordance with EAS 803

10.3 Health and nutrition claims

Health and nutrition claims may be used in accordance with EAS 804 and EAS 805

11 Sampling

Sampling for flavoured milk shall be done in accordance with ISO 707.

Annex A
(normative)

Determination of pH variation

A.1 Apparatus

A.1.1 Incubator, adjusted at 55 °C ± 1 °C

A.1.2 pH meter

A.2 Procedure

Determine the pH of 50 ml of the sample in the flask, with a glass electrode at 20 °C and note the reading. Then incubate another 50 ml of the sample at 55 °C ± 1 °C for five days. Examine each day, then shake and return it in the incubator. After five days' incubation at 55 °C ± 1 °C, remove the sample from the incubator and cool to room temperature. Take a small portion of it and measure the pH in the pH meter with the glass electrode at 20 °C. From this pH value, subtract the initial pH value.

A.3 Interpretation of results

A sample which does not show any physical alteration during incubation at 55 °C ± 1 °C for five days and where the pH does not show a difference of more than 0.3 unit from the initial pH is considered sterile.

If any physical alteration of the contents is observed (coagulation with, or without exudation, grittiness, formation of bubbles or scum peptonization or proteolysis) the product shall be considered as nonsterile.

Bibliography

1) RS 194: 2013, *Flavoured milk — Specification*