

**KENYA STANDARD**

**DKS 05-941: 2013  
(2<sup>ND</sup> EDITION)**

**Specification for fermented (cultured) milks**

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The following organizations were represented on the Technical Committee:

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Government Chemist Department  
Egerton University — Department of Dairy and Food Science Technology  
Kenya Dairy Board  
Kenya Industrial Research and Development Institute (K.I.R.D.I.)  
Bio Food Products  
Consumer Information Network  
Eldoville Dairies Limited  
Ministry Of Agriculture, Livestock and Fisheries- State Department of livestock  
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## REVISION OF KENYA STANDARDS

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# **Specification for fermented (cultured) milks**

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## P R E F A C E

This Kenya Standard was prepared by the Milk and milk Products Technical Committee under the guidance of the Standards Project Committee and it is in accordance with the procedures of the Kenya Bureau of standards

Fermented (cultured) milk products generally refer to all dairy products which employ select micro-organism to develop the characteristic flavour and/or body and texture. Fermented or cultured dairy products constitute a very important part of the dairy industry and traditionally have been reputed to have beneficial effects on health. In Kenya these products have gained popularity and their production is rising steeply due to increased demand.

The internationally known types of fermented milks which are of economic importance covered in this standard are the plain fermented milk, cultured buttermilk, acidophilus milk and kumys milk

The first edition of this standard was published in 1993. This standard stipulates quality parameters on the specific cultures to be used on the various types of fermented milk, microbiological limits, acidity levels, organoleptic properties and expiry date amongst other requirements.

The standard was revised to include traditionally fermented milk known as 'mursik' milk. This product is treated with a burnt stick from the tree 'Olea Africana' locally known as sinetwet, the ground herb that gives the milk a characteristic pleasant flavor, taste and aroma. Mursik has become a very famous drink in the Kenyan market. This revised edition also reflects changes in the technical committee representation, re-organization of clauses, and expansion of the microbiological requirements table and inclusion of other reference standards

The labeling clause has been further expanded to enable consumers make informed choices when purchasing fermented milk products

During the preparation of this standard, reference was made to the following documents:

IDF 47: — 1969 — International Dairy Federation Standard on compositional standard for fermented milks.

International Journal of Food microbiology: By Dr.Maina, 2008

IDF D-DOC 185/1990 — Standard of identity for fermented milks.

Acknowledgement is hereby made for the assistance derived from the above sources.

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**KENYA STANDARD****SPECIFICATION FOR FERMENTED (CULTURED) MILKS**

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**1. SCOPE**

This Kenya Standard specifies the requirements for fermented (cultured) milks for human consumption.

- 1.1 Application** — This standard shall not apply to yoghurt. The requirements for yoghurt are specified in KS EAS 33, Specification for yoghurt (*First Revision*).

**2. DEFINITION**

Fermented milks are prepared from one or combination of the following: whole milk, partially or fully skimmed milk, concentrated milk, buttermilk which are pasteurized or sterilized and fermented by means of specific micro-organisms which shall be viable, active and abundant in the finished product at the time of sale for consumption. After fermentation, heat treatment shall not be allowed. For the purposes of this standard Table 1 may be referred to as recommended processing scheme of production of fermented milk.

**3. ESSENTIAL INGREDIENTS**

- 3.1 Raw Materials** — Fresh or constituted whole, partially or fully skimmed milk, buttermilk, cream or their mixtures.

- 3.2 Cultures** — For the fermentation, specific, non-pathogenic, non-toxic micro-organisms producing shall be used.

**4. OPTIONAL ADDITIONS**

- 4.1 Plain Fermented Milks** — The plain fermented milks shall comply with Table 1 (Item V) and shall be prepared from the ingredients listed under Clause 3.

- 4.2** For non-plain fermented milks, the amounts of additions listed under **4.2.1** to **4.2.3** must not exceed 30 per cent per weight of the final product.

- 4.2.1 Food Additives** — Only those natural flavour or colours permitted by the Ministry of Health in Food, Drugs and Chemical Substances Act, Cap. 254 shall be used.

- 4.2.2 Sugars** — The following carbohydrate sweetening agents like sucrose, dextrose, fructose, hydrolyzed lactose shall be used.

- 4.2.3 Flavouring Foods** — The following flavouring foods may be added: edible fruits and vegetables, puree or pulp, chocolate, cocoa, nuts, spices, herbs such as Africana Olea tree 'sinetwet' and other harmless natural flavouring foods

- 4.3 Preservatives** — The products specified under this standard shall be free from any preservatives.

## 5. QUALITY FACTORS FOR TYPICAL FERMENTED MILKS AND CULTURES

5.1 The quality factors for typical fermented milks shall comply as indicated in Table 1.

TABLE 1- DESIGNATION AND QUALITY FACTORS OF FERMENTED MILKS

DESIGNATION	CULTURE	COMPOSITION	METHODS OF TEST
(i) Cultured buttermilk	Streptococcus lactis Streptococcus diacetolactis Streptococcus cremoris Leuconostoc citrovacuum Leuconostoc dextranicum	The maximum acidity of the product shall be 0.60 per cent by mass expressed as lactic acid	KS ISO 11869
(ii) Acidophilus milk	Lactobacillus acidophilus	Acidity not lower than 1.0 per cent by mass expressed as lactic acid	KS ISO 11869
(iii) Kefir	Starter prepared from kefir grains, whose microbial population is constituted by yeasts both lactose fermenting (Kluyveromyces marxianus and non-lactose fermenting) (Saccharomyces unisporus, saccharomyces cerevisiae and saccharomyces exigus), Lactobacillus kefir, species of the general leuconostoc, Lactococcus and acetobacter growing in a strong, specific relationship.	Acidity not lower than 0.60 per cent per mass expressed as lactic acid. Ethanol content not lower than 0.1 per cent (volume/mass)	KS ISO 11869
(iv) Kumys	Lactobacillus delbrueckii subsp. bulgaricus and kluyveromyces marxianus (strains exhibiting high antibiotic activity against mycobacterium tuberculosis)	Acidity not lower than 0.7 per cent by mass expressed as lactic acid	KS ISO 11869

(v) Fermented milk	The following can be used to manufacture fermented milk separately or in composition:  Streptococcus lactic Streptococcus diacetylactics Streptococcus cremoris Leuconostoc citravocum Leuconostoc dextransicum Streptococcus thermophilus	The acidity shall be 0.70 per cent to 0.90 per cent by mass expressed as lactic acid	KS ISO 11869
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5.2 Mursik milk shall comply with all the requirements for fermented milk (v) in table 1,

5.3 The fermented milk (item (v) indicated in Table 1 shall comply with the chemical requirements expressed in Table 2.

**TABLE 2. CHEMICAL REQUIREMENTS OF FERMENTED MILK**

SL No.	Product Characteristic	Fermented whole	Fat reduced fermented milk	Low fat fermented milk	METHODS OF TEST
(i)	Milk fat per cent, (min.)	3.3	8.52.25	Less than 2.25	KS ISO 8682-2
(ii)	Milk solids not fat, (min.)	8.5	8.1	7.9	KS EAS 70

5.4 Mursik milk shall comply with all chemical requirements of fermented whole milk in table 2

## 6. BODY AND TEXTURE OF FERMENTED MILK

6.1 The fermented milk products specified under this standard shall have the characteristic taste and flavour when tested with the methods stipulated in KS 05-746, Methods of sensory analysis of foods.

6.2 The stirred fermented milks shall be free flowing and shall not whey off.

## 7. HYGIENE REQUIREMENTS

7.1 The products covered by the provision of this standard shall be prepared in accordance with the Public Health Act, (Cap. 242), Dairy Industry Act (Cap. 336), Food, Drugs and Chemical Substances Act, (Cap. 254) and any other relevant Kenya Regulations.

### 7.2 Microbiological Requirements

The products covered under this standard shall comply with the microbiological requirements in table 3

**Table 3- microbiological Requirements for fermented milk**

Sl No.	microorganisms	Requirement/ limit	Test methods
1.	E.coli	NIL/g	Ks 220
2.	salmonella	Nil/ 25g	KS 220
3.	Listeria monocytogenes	Nil/25g	KS 220
4.	s.aureaus	Nil/g	KS 220
5.	Clostridium botulinum	Nil/g	KS 220
6.	Yeast and moulds max,	100cfu/g	KS 220
7.	Coliforms max	10cfu/g	KS 220

**7.3** Mursik milk shall comply with all microbiological requirements in table 3

## **8. PACKAGING**

The product shall be supplied in containers made of suitable material and shall be well sealed in order to prevent contamination of the contents during storage and transportation.

## **9. LABELLING**

In addition to the labelling requirements stipulated in KS EAS, Labelling of prepackaged foods, the following information shall be on the label:

- a) Name of the product shall be declared in accordance with categories defined in clause 5, as 'fermented whole milk', 'fat reduced fermented milk' or 'low fat fermented milk' and as 'mursik' for the mursik milk
- b) List of Ingredients in descending order of proportion.
- c) Net contents in milliliters or litres
- d) Name and address of the manufacturer, packer or distributor
- e) Country of origin
- f) Date of manufacture
- g) Expiry date
- h) Storage instructions
- i) Lot identification

## **10 SAMPLING**

Sampling shall be done in accordance to with KS ISO 707