

Animal ghee — Specification

PUBLIC REVIEW DRAFT

KS 1790: 2014

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Kenya Dairy Board
Ministry Of Health — Public Health Department
Ministry of Agriculture, Livestock and Fisheries — State Department of Livestock
Government Chemist's Department
Egerton University — Department of Dairy and Food Science Technology
Kenya Industrial Research and Development Institute (KIRDI)
Consumer Information Network
Sameer Agriculture and Livestock (K) Limited
New Kenya Cooperative Creameries (NKCC)
Brookside Dairy Limited
Eldoville Dairies Limited
Githunguri Dairy Bio Food Products Limited
Happy Cow Limited
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

© Kenya Bureau of Standards, 2003

Copyright: Users are reminded that by virtue of Section 6 of the Copyright Act, Cap. 130 of the Laws of Kenya, copyright subsists in all Kenya Standards and except as provided under Section 7 of this Act, no Kenya Standard produced by Kenya Bureau of Standards may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from the Managing Director.

PUBLIC REVIEW DRAFT

Animal ghee — Specification

PUBLIC REVIEW DRAFT

KENYA BUREAU OF STANDARDS (KEBS)

Head Office: P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax: (+254 020) 604031
E-Mail: info@kebs.org, Web:<http://www.kebs.org>

Coast Region

P.O. Box 99376, Mombasa-80100
Tel.: (+254 041) 229563, 230939/40
Fax: (+254 041) 229448

Lake Region

P.O. Box 2949, Kisumu-40100
Tel.: (+254 057) 23549, 22396
Fax: (+254 057) 21814

North Rift Region

P.O. Box 2138, Nakuru-20100
Tel.: (+254 051) 210553, 210555

Foreword

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

Animal ghee is a coarse, granular anhydrous bovine milk fat product obtained from churning dairy cream to separate the butter and then heating until the water is driven off.

Due to its long shelf life, animal ghee is the most widely used milk product in the semi-arid regions (in Northern Kenya). It is also the only source of animal fat for the predominantly vegetarian population.

Since this product can easily be adulterated with animal body fat or vegetable fats, it is therefore necessary that specifications be set to regulate the quality of animal ghee offered for consumption.

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

Codex Stan 280

The Pearsons' Book of Food Analysis – 9th Edition.

KS 05-326 Specification for edible fats and oils Parts 1-6 (*Second Revision*).

The assistance derived from these documents is hereby acknowledged.

Animal ghee — Specification

1 Scope

1.1 This Kenya standard specifies the requirements and test methods for animal ghee, made fit for human consumption.

1.2 This standard shall only apply to the ghee obtained from cows' milk.

2 Normative references

The following referenced documents are indispensable for the application of this standard:

KS EAS 38 *Labelling of prepackaged foods*

Codex Stan 280 Codex standard for milk fat products

KS 05-232 *Specification for margarine*

KS 05-327 *Methods of sampling and test for edible fats and oils*

KS 05-1051 *Guide on maximum limits of pesticide residues in foods*

KS 2194:2009 – Good Manufacturing practice guide lines and the Dairy industry

KS 05-1552 *Code of hygienic practice for production, handling and distribution of milk and milk products*

KS ISO 663 *Animal and vegetable fats and oils — Determination of insoluble impurities*

KS ISO 707 *Milk and Milk products — Sampling*

KS ISO 3960 *Animal and vegetable fats and oils — Determination of peroxide value*

KS ISO 3961 *Animal and vegetable fats and oils — Determination of iodine value*

KS ISO 8294 *Animal and vegetable fats and oils — Determination of copper, iron and nickel contents*

KS ISO 12193 *Animal and vegetable fats and oils — Determination of lead content*

AOAC 980.21, organochlorine and organophosphorous pesticide residues in milk and milk products

Weights and Measures Act, Cap. 513

Public Health Act, Cap. 242

Foods, Drugs and Chemical Substances Act, Cap. 254

3 Definition

For the purpose of this standard, the following definition shall apply:

3.1 animal ghee

shall be a semi-solid anhydrous milk fat product obtained from heating of butter or cream to remove practically the entire water

4 Identity characteristics

Animal ghee shall have the following identity characteristics:

Table 1 — Identity characteristics for animal ghee

SL No.	Characteristic	Requirement (Range)	Test method
i)	Melting point range	28 – 44 °C	KS 05-327
ii)	Iodine value (Wijs)	26 – 38	KS ISO 3961
iii)	Saponification value, (mg KOH/g oil), (min.)	220	KS 05-327
iv)	Reichert value	26 – 28	
v)	Butyro-refractometer reading at 40 °C	40 – 43	
vi)	Mineral oil test	Negative	
vii)	Baudouin test	Negative	
viii)	Test for foreign colours	Negative	
ix)	Melting point	27 - 37° C	

5 Quality requirements

5.1 General requirements

5.1.1 Colour

The colour of animal ghee when in liquid form shall be transparent amber and while in solid form, animal ghee shall be creamy white in colour.

5.1.2 Odour and taste

Shall be characteristic of animal ghee and free from foreign odour and taste

5.2 Chemical requirements

Animal ghee shall comply with the chemical requirements stipulated in Table 2:

Table 2 — Chemical requirements for animal ghee

SL No.	Characteristic	Requirement	Test method
i)	Free fatty acid, as oleic acid (%) m/m, max.	0.3 – 0.5	KS 05-327
ii)	Milk fat % (m/m), min.	99.8	KS 05-232
iii)	Moisture % (m/m), max.	0.2 - 0.3	KS 05-327
iv)	Peroxide value (mEq O ₂ /kg oil), max.	0.6	KS ISO 3960

6 Food additives

The food additives which may be used in the manufacture of animal ghee shall be those known not to present a toxic hazard and shall comply with the limits approved by the Codex Alimentarius Commission and the requirements laid down in the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya.

6.1 Antioxidants

Only permitted anti-oxidants shall be used up to a level of 200 mg/kg, max.

6.2 Neutralizing agents

Limited by GMP.

7 Hygiene

7.1 Animal ghee shall be processed in licensed premises complying with the hygienic requirements stipulated in KS 05-1500, KS 05-1552, the Public Health Act, Cap. 242, and the Food, Drug and Chemical Substances Act, Cap. 254 of the Laws of Kenya.

7.2 Animal ghee shall not have any pathogenic micro-organisms.

8 Contaminants

8.1 Animal Ghee shall not contain any deleterious substances harmful to human health and when tested according to the reference test methods given, the contaminant limits shall not exceed those stipulated in Table 3.

Table 3 — Contaminant limits for animal ghee

SL No.	Contaminant	Maximum limit	Test method
i)	Matter volatile at 105 °C, % (m/m), max.	0.2	KS 05-327
ii)	Insoluble impurities, % (m/m)	0.05	KS ISO 663
iii)	Soap content	Nil	KS 05-327
iv)	Iron (Fe), mg/kg	0.2	KS ISO 8294
v)	Copper (Cu), mg/kg	0.05	KS ISO 8294

vi)	Lead (Pb), mg/kg	0.1	KS ISO 12193
vii)	Arsenic (As), mg/kg	0.1	KS 05-327

8.2 Pesticide residues

In addition to pesticide residue limits specified in KS 05-1051, the product shall comply with the limit of Pesticide residues in table 4 below

Table 4 - maximum pesticide residue Limits for Animal ghee

S/N	Parameter	Requirements	Test method
<i>i</i>	Organochlorine Group	0.01 ppm	KS ISO 3890-2:2009
<i>ii</i>	Organophosphorous group	0.01 ppm	KS ISO 3890-2:2009

9 Packaging

Animal ghee shall be packaged in airtight food grade containers, which shall be well filled and sealed to prevent contamination.

10 Labelling

In addition to KS EAS 38, the following specific provisions shall apply:

- i) the name of the product;
- ii) source of the animal ghee, whether from cow, goat, camel, etc.;
- iii) name, address and physical location of the manufacturer/processor;
- iv) net contents in g or kg;
- v) manufacturing date;
- vi) best before date;
- vii) country of origin;
- viii) conditions of storage;
- ix) batch/lot number.

11 Fill of the container

For retail market, the volume of the product in the presentation container shall be the capacity stipulated in the Weights and Measures, Act, Cap. 513 of the Laws of Kenya.

12 Sampling

12.1 Sampling for the purpose of testing shall be done in accordance with the method prescribed in KS ISO 707.

12.2 Any container or package drawn randomly from a lot or batch shall constitute a representative sample of that lot/batch.

PUBLIC REVIEW DRAFT