

DRAFT UGANDA STANDARD

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Shea nut – Specification



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Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to co-ordinate the elaboration of standards and is

- (a) a member of International Organisation for Standardisation (ISO) and
- (b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
- (c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

DUS 1636 was prepared by Technical Committee TC 2-SC 2, *Oil Seeds, Edible Fats and Oils*.

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Shea nut — Specification

1 Scope

This standard specifies the quality requirements, methods of sampling and testing for sheanut/ kernel originating from fruits of the tree *Vitellaria paradoxa* Cf Gaertn of the family Sapotaceae which is processed into fat/oil and other products destined for human use.

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.

EAS 38, *Labelling of pre-packaged foods — Specification*

EAS 39, *Code of practice for hygiene for food and drink manufacturing industries*

US ISO 542, *oil seeds- Sampling*

US ISO 660, *Animal and vegetable fats and oils - Determination of acid value and acidity.*

US ISO 662, *Animal and vegetable fats and oils — Determination of moisture and volatile matter content*

US ISO 663, *Animal and vegetable fats and oils — Determination of insoluble impurities content*

ISO 2590, *General method for determining of arsenic — Diethyldithiocarbamate photometric method*

US ISO 3960, *Animal and vegetable fats and oils- Determination of peroxide value.*

US ISO 8294, *Animal and vegetable fats and oils- Determination of copper, iron, and nickel content.*

US ISO 12193, *Animal and vegetable fats and oils - Determination of lead by direct graphite furnace atomic absorption spectroscopy.*

3 Terms and definitions

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

3.1

Shea nut

de-pulped Fruits of the tree *Vitellaria paradoxa* Cf Gaertn.

3.2

Shea kernel

decorticated (shelled) nut of the tree *Vitellaria paradoxa* Cf Gaertn.

3.3

Damaged nuts/kernels

nuts/kernels which are damaged mechanically, or by mould or weevils, or those showing internal discoloration of kernels which affects the quality. Characteristics of damaged kernels include mildewed, germinated and hardened (blackened).

3.4

Mouldy/decayed kernels

kernels with evidence of mould particularly mould filaments and showing visible significant decomposition.

3.5

Empty nuts

nuts in which there are no kernels.

3.6

Shriveled nuts/kernels

Nuts/kernels which are imperfectly developed and shrunken,

3.7

Broken kernels

kernels from which more than a quarter has been broken off.

3.9

Split kernels

kernels which have been split into halves.

3.10

Impurities

all matter other than whole sheanuts/kernels. Impurities includes: sand, stones, pebbles, dirt, lumps of earth, clay, mud, glass, metallic and plastic pieces, other vegetative materials such as grass, wood, bits of dry sheanuts/kernels or other seeds and filth.

3.11

Filth

filth includes impurities of animal origin, including dead insects.

3.12

Insect infestation

presence of live insects, or their eggs and / or other developmental stages.

3.13

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

4 Quality and compositional requirements

4.1 General quality requirements

4.1.1 Shea nuts

Shea nuts shall ;

- i. have the appearance and colour characteristic of the variety.
- ii. Be clean and reasonably uniform in size.

- iii. be free from insect infestation.

4.1.2 Shea kernels

Shea kernels shall;

- i. have the appearance and colour characteristic of the variety.
- ii. be clean and reasonably uniform in size.
- iii. be safe and suitable for processing for human use and
- iv. be free from rancid odours and mustiness.
- v. be free from insect infestation.
- vi. Total fat content of shea kernel shall not be less than 35% m/m

4.2 Specific quality requirements

4.2.1 Shea kernel shall comply with requirements specified in Table 1.

Table 1 — Specific quality requirements of shea kernel

S/No	Parameters	Grade I	Grade II	Grade III	Method of test
i)	Moisture and matter volatile at 105 °C, % m/m.	5 max.	>5-<7	7-8	US ISO 662
ii)	Impurities % m/m	0.5 max	>0.5 -0.8	>0.8-1	US ISO 663
xi)	Free Fatty Acid, % m/m,	2 max	>2-4	>4- 5	US ISO 660
xii)	Peroxide value, mEq peroxide oxygen/kg oil.	5max.	>5- 9	>9-15	US ISO 3960

4.2.2 Shea nut/kernel shall comply with Physical defects requirements specified in Table 2.

Table 2 - Requirements for physical defects in shea nuts/kernels

S/No.	Characteristic	Shea nut	Shea Kernel
1	Damaged nuts/kernels, % (m/m) max.	0.5	0.5
2	Shrivelled nuts/kernels, % (m/m) max.	3	3
3	Mouldy/decayed kernels% 2 2 (m/m) max.	2	2
4	Skinned kernels, % (m/m) max.	-	0.5
5	Broken and split kernels, % (m/m) max.	-	2
6	Empty nuts, % (m/m)max.	2	-

7	Admixtures of other varieties, % (m/m) max.	1	1
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5 Hygiene

Shea kernel shall be produced, prepared and handled in accordance with EAS 39

6 Contaminants

6.1 Pesticide residues

Shea kernel shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

6.2 Other contaminants

Shea kernel shall comply with those maximum limits specified in Table 3.

Table 3 — Limits for contaminants in Shea kernel

S. No.	Contaminant	Maximum level	Method of test
	Iron, mg/kg	5.0	US ISO 8294
ii)	Copper, mg/kg	0.4	
iv)	Lead, mg/kg	0.1	US ISO 12193
v)	Arsenic, mg/kg	0.1	ISO 2590

6.3 Chemical contaminants

The Aflatoxin content of shea kernel shall not be more than 10 ppm.

7 Packaging

Shea kernel shall be packaged in food grade containers and sealed in manner to ensure the safety and quality requirements specified in this standard are maintained throughout the shelf life of the product.

8 Labelling

In addition to the labeling requirements in EAS 38, the following shall be indicated:

The name of the product shall be "Shea butter"

9 Sampling

Sampling shall be carried in accordance with US ISO 542

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Bibliography

- [1] ARS shea-k, African standard for shea kernel, 2011
- [2] Global Shea Alliance, Industry quality Standards for shea nut, proposal to general assembly, 2013
- [3] Quality and compliance to standards for Shea products,

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Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

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