

DRAFT UGANDA STANDARD

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Dark sweet and Black strap molasses — Specification



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Foreword

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- (a) a member of International Organisation for Standardisation (ISO) and
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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.

The committee responsible for this document Technical Committee UNBS/TC 2, [Food and Agriculture], Subcommittee SC 11, [Sugar, edible starches and related confectionery products].

This is the first edition which has been technically developed.

Dark sweet and Black strap molasses — Specification

1 Scope

This Draft Uganda Standard specifies requirements, test and sampling methods for Dark sweet and Black strap molasses intended for direct human consumption.

2 Normative references

The following referenced documents 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.

US 28, *Code of practice for hygiene in the food and drink manufacturing industry*

US 45, *General standard for food additives*

US 738, *General standard for contaminants and toxins in food and feed (4th Edition)*

US 1659, *Materials in Contact with Food — Requirements for Packaging materials*

US CAC/GL 50, *General guidelines on sampling*

US EAS 5, *Refined white sugar – Specification*

US EAS 8, *Raw cane sugar – Specification*

US EAS 12, *Potable water — Specification*

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

US EAS 749, *Brown sugar – Specification*

US EAS 770, *Fortified sugar — Specification*

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

US ISO 2173, *Fruit and vegetable products — Determination of soluble solids — Refractometric method*

US ISO 2447, *Fruit and vegetable Products — Determination of tin content*

US ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*

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

US ISO 5379:2013, *Starches and derived products – Determination of sulphur dioxide content, Acid metric method and nephelometric method*

US ISO 6633, *Fruit and vegetables products — Determination of lead content – Flameless atomic absorption spectrometric method*

US ISO 6634, *Fruit, vegetables and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method*

US ISO 6637, *Fruits, vegetables and derived products — Determination of mercury content — Flameless atomic absorption method*

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

US ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

US ISO 21527-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 1, Colony count technique in products with water activity greater than 0.95*

3 Terms and definitions

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

**3.1
brix or degrees brix**
the concentration of sugar in syrup corresponding approximately to concentration of solutes expressed in percentage as measured with a refractometer or hydrometer and expressed in °Brix units

**3.2
food packaging material**
any product to be used for containment, protection, handling, delivery, storage, transport and presentation of food

Note 1 to entry: Food packaging may have direct or indirect contact with the food. — Direct food contact surfaces or materials are in contact (i.e. physically touching the food or in contact with the headspace) or will be in contact with the food during normal use of the food packaging. — Indirect food contact surfaces or materials are not in direct contact with the food during

**3.3
Molasses**
Is clean, sound, liquid product obtained by evaporating the juice of sugarcane and other alternative plant sources and removal of all or any part of the commercially crystallisable sugar

4 Essential composition and quality requirements

4.1 General requirements

Dark sweet and black strap molasses shall;

- a) be characteristic of the product and have a well-balanced flavour
- b) be free from off-odours and off-flavours when assessed using the normal sensory tests.
- c) be free from foreign matter such as impurities of animal origin, including dead insects when assessed using the normal senses.

- d) have a uniform consistency
- e) show no turbidity (except turbidity arising from the ingredients)
- f) shall show no sedimentation (except sedimentation arising from the ingredients)

4.2 Ingredients

4.2.1 Sugar cane

- a) Dark sweet and black strap molasses shall be prepared from Sugarcanes and other alternative plant sources selected at the proper stage of maturity
- b) Sugarcanes used shall be free from damage or contamination
- c) Sugarcane used shall be clean and of good quality

4.2.2 Other permitted ingredients

Other added ingredients used in the production of dark sweet and black strap molasses shall comply with the requirements;

- a) Brown sugar added shall comply with US EAS 749
- b) Refined white sugar added shall comply with US EAS 5
- c) Fortified white sugar added shall comply with US EAS 770
- d) Raw cane sugar added shall comply with US EAS 8

4.2.3 Water

Dark sweet and black strap molasses shall be manufactured with potable water that comply with US EAS 12.

4.3 Essential composition

Dark sweet and black strap molasses shall have the following proximal parameters as in Table 1

Table 1— Proximal analysis of Dark sweet and black strap molasses

S/N	Parameter	Limit		Method of test
		Dark sweet molasses	Black strap molasses	
i	Total soluble solids at 20 °C Min.	74° Brix		US ISO 2173
ii	pH of 10% solution m/v	4.0-6.0		ICUMSA GS1/2/3/4/7/8/9-23
iv	Total sugars % m/m Min.	45	35	ICUMSA GS 4/3- 7
v	Ash content % m/m Max.	10		AOAC 900.02
vi	Density, g/cm ³ min.	1.30		AOAC 962.37
vii	Sulphated ash % m/m Max.	16		ICUMSA GS3/4/7/8-11
vii	Sulphur dioxide as SO ₂ ppm, Max.	< 100		US ISO 5379
ix	Sludge % v/v Max	absent		Annex A

5 Contaminants

5.1 Pesticide residues

Dark sweet and black strap molasses shall conform to those residual limits for pesticides established by the Codex Alimentarius Commission.

5.2 Heavy metals

Dark sweet and black strap molasses shall not exceed the limits of metal Contaminants as in Table 2.

Table 2 — Maximum level of metallic contaminants in Dark sweet and black strap molasses

S/N	Parameter	Limit (mg/kg)	Method of test
i)	Lead (Pb)	0.05	US ISO 6633
ii)	Arsenic (As)	0.2	US ISO 6634
iii)	Tin (Sn)	250	US ISO 2447
iv)	Mercury (Hg)	0.05	US ISO 6637

5.3 Other Contaminants

Dark sweet and black strap molasses shall conform to those maximum levels for contaminants and toxins as in US 738.

6 Hygiene

Dark sweet and black strap molasses shall be processed, packaged and transported following hygienic practices in accordance with US 28.

6.1 Microbiology

Dark sweet and black strap molasses shall be free from microorganisms as stated in Table 3 below;

Table 3 — Microbiological requirements for Dark sweet and black strap molasses

S/N	Microorganism	Limit	Test method
i)	Total plate count, cfu/g, max.	25	US ISO 4833-1
ii)	Coliform count, cfu/g, max.	Absent	US ISO 4831
iii)	Yeast and mould count, cfu/g, max.	5	US ISO 21527-1
iv)	E.coli cfu/, max.	Absent	US ISO 7251
v)	Staphylococcus aureus cfu/g, max.	Absent	US ISO 6881-1

7 Additives

Dark sweet and black strap molasses shall contain only permitted additives in accordance with US 45.

8 Packaging

Dark sweet and black strap molasses shall be packaged in clean food grade packaging material which comply with US, 1659.

9 Weights and measures

9.1 Method of fill

Dark sweet and black strap molasses shall be filled in compliance with the Weights and measures act.

10 Labelling

In addition to the requirements of US EAS 38, the following labelling requirements shall apply and shall be legibly and indelibly marked.

- a) Common name of the product to be declared on the label as "Dark sweet molasses or Black strap molasses";
- b) Net contents by volume ('System International') units;
- c) Name and physical address of the manufacturer/distributor;
- d) Country of origin;
- e) Lot /batch identification;
- f) Shelf life: best before/use by date;
- g) Statement 'Food for Human Consumption' shall appear on the package;
- h) Storage conditions
- i) Instructions on disposal of used package;
- j) Each container may also be marked with a Certification Mark
- k) Any other requirement as given OIML R87, Quantity of product in pre-packages.
- l) List of the ingredients and their quantities
- m) Packing date
- n) Instruction for use

11 Nutrition and health claim

Dark sweet and black strap molasses may have health claims associated with nutritional composition and health. Such claims when declared shall be consistent with US EAS 805.

12 Sampling

Sampling and analysis of Dark sweet and black strap molasses shall be done in accordance with US CAC/GL 50.

ANNEX A,

(Normative)

Determination of Brix

A.1 Brix determination by spindle method Determine the Brix by using an appropriate spindle 30 °C Baume-60 °C Baum. Note the reading and the temperature from the thermometer attached to the base of the spindle. Apply the temperature correction and record the Brix at 20 °C.

A.2 Brix determination by refractometer method Using a 50 % sample solution pipette a few mL through the clarity filter rubber teat pipette and pour onto the glass prism cover. Press the read function to take the reading. Multiply the reading by two to get the result.

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ANNEX B

(Normative)

Determination of loose sludge

B.1 Weigh 270 g of raw molasses and add the following quantity of distilled water X g,

where $X = 6 \times (\text{Brix} - 45)$ g of distilled water at 20 °C.

B.2 Adjust the pH to 4.5 using 10 % H₂SO₄. Boil for 3 min and allow settling in graduated cones. Note the settled volume after 30 min and express as %, (v/v) loose sludge.

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Bibliography

- [1] CODEX STAN 247-2005, GENERAL STANDARD FOR FRUIT JUICES AND NECTARS.
- [2] US EAS 819:2014, Molasses for Industrial use — Specification

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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.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

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