DUS DARS 842

DRAFT UGANDA STANDARD

First Edition
2025-mm-dd

Cassava wheat composite flour — Specification

Reference number
DUS DARS 842: 2024

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National foreword

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(a) a member of International Organisation for Standardisation (ISO),

(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and

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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.

This Draft Uganda Standard, DUS DARS 842: 2024, *Cassava wheat composite flour — Specification*, is identical with and has been reproduced from a Draft African Standard, DARS 842: 2024, *Cassava wheat composite flour — Specification*, and adopted as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 204, *Fruits, vegetables, tubers and processed products*.

This standard will cancel and replace US EAS 741:2022, *Cassava wheat composite flour — Specification*.

Wherever the words, “African Standard" appear, they should be replaced by "Uganda Standard".

AFRICAN STANDARD

DARS 842

Second Edition 2024

Cassava wheat composite flour — Specification

Reference No. DARS 842:2024(E)
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Table of contents

Foreword

The African Organization for Standardization (ARS) is an African intergovernmental organization made up of the United Nations Economic Commission for Africa (UNECA) and the Organization of African Unity (AU). One of the fundamental mandates of ARSO is to develop and harmonize African Standards (ARS) for the purpose of enhancing Africa's internal trading capacity, increase Africa's product and service competitiveness globally and uplift the welfare of African communities. The work of preparing African Standards is normally carried out through ARSO technical committees. Each Member State interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, Regional Economic Communities (RECs), governmental and non-governmental organizations, in liaison with ARSO, also take part in the work.

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

This African Standard was prepared by the ARSO Technical Committee on, Cassava value chain products (ARSO/PC 02).

The 1st Edition ARS 842-2016 Cassava wheat composite flour — Specification has been superseded and replaced by this publication.

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Introduction

Cassava is cultivated in many parts of Africa. The farmers have a number of varieties both indigenous and improved. Cassava roots have a short shelf-life and are either consumed immediately after harvest or have to be processed into shelf stable products.

Cassava roots are processed at household and cottage levels in the rural areas. Processing at these levels involves mainly the production of cassava chips and flour from fermented or unfermented roots.

The processing of cassava roots into flour is done by traditional methods. The process for production of flour involves peeling, cutting into pieces, sun drying, milling, sieving and packaging for unfermented flour. For fermented cassava flour, the cassava pieces are fermented before sun drying.

Currently, cassava flour is mainly used in the making flour and local gin despite its many application. For example, the use of cassava flour for baking bread or biscuits is limited, but the potential for cassava flour to be used in the baking industry exists. Use of cassava in the baking as composite cassava -wheat flour, will save foreign earnings from the importation of wheat.

Development of this standard should encourage the processing and use of cassava flour in baking products such as bread, biscuits, buns, doughnuts, and pancakes. This standard therefore aims at providing guidance for the production of high quality grade composite cassava flour for baking.

Cassava wheat composite flour — Specification

1 Scope

This Draft African Standard specifies requirements, sampling and test methods for cassava-wheat composite flour.

This standard does not apply to other composite flours from non-wheat sources which may be used in different products.

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.

ARS 53, *General principles of food hygiene — Code of practice*

ARS 56, *Prepackaged foods — Labelling*

ARS 470, *Wheat flour — Specification*

ARS 838, *Cassava flour -— Specification*

ARS 844, *Cassava and cassava products — Determination of total cyanogens — Enzymatic assay method*

CXS 192, *General standard for food additives*

CXS 193, *Codex general standard for contaminants and toxins in food and feed*

ISO 3588,

ISO 712, *Cereals and cereal products — Determination of moisture content — Reference method*

ISO 1871, *Food and feed products — General guidelines for the determination of nitrogen by the Kjeldahl method*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella* spp.

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*

ISO 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

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

ISO 7305, *Milled cereal products — Determination of fat acidity*

ISO 16050, *Foodstuffs — Determination of aflatoxin B_1, and the total content of aflatoxin B_1, B_2, G_1 and G_2 in cereals, nuts and derived products — High performance liquid chromatographic method*

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*

ISO 24333, *Cereals and cereal products — Sampling*

3 Terms and definitions

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

3.1
cassava-wheat composite flour
combination of cassava flour and wheat flour

3.2
filth
impurities of animal origin (including dead insects)

3.3
food grade material
one that will not transfer non-food chemicals into the food and contains no chemicals which would be hazardous to human health

3.4
foreign matter
all organic and inorganic materials (such as sand, soil, glass)

3.5
flour
finely ground content of wheat grains or dried peeled cassava roots

4 Requirements

4.1 General requirements

The general requirements for cassava wheat composite flour shall be as follows:

(a) homogenous in size and colour;

(b) practically free of filth and foreign matter; and

(c) free from rancid, objectionable odours or flavours.

4.2 Ingredients

The cassava flour used in the manufacture of composite flour shall comply with ARS 838. The wheat flour shall comply with ARS 470.

4.3 Particle size

Testing for particle size shall be done in accordance with ISO 3588. Not less than 90 % shall pass through a 0.25 mm sieve for fine flour.

4.4 Specific requirements

Composite cassava wheat flour shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for cassava wheat composite flour

SN	Characteristic	Requirement	Test method
i.	Protein content, percent by mass, min. (N x 6.25)	8.0	ISO 1871
ii.	Acid value, mg/kg	50	ISO 7305
iii.	Acid insoluble ash, % by mass, max.	0.35	Annex A
iv.	Moisture content, %, by mass, max.	13.5	ISO 712
v.	Hydrocyanic acid content, mg/kg, max.	10	ARS 844
vi.	Aflatoxin, Total, ppb Aflatoxin, B1, ppb	10 5	ISO 16050

5 Food additives

Food additives may be used in the preparation of composite flour in accordance with CXS 192.

6 Contaminants

6.1 Pesticide residues

Cassava wheat composite flour shall conform to maximum residue limits for pesticide residues established by the Codex Alimentarius Commission for this commodity.

6.2 Other contaminants

6.2.1 Cassava wheat composite flour shall comply with the maximum levels given in CXS 193.

7 Hygiene

7.1 The product covered by the provisions of this standard shall be prepared and handled in accordance with ARS 53 and shall comply with the microbiological limits specified in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Microbiological limits for cassava wheat composite flour

S/N	Micro-organism	Requirement	Test method
i.	*Escherichia coli,* cfu/g	Absent	ISO 7251
ii.	*Salmonella*, 25 g	Absent	ISO 6579
iii.	Yeasts and moulds, cfu/g, max.	10^4	ISO 21527-1
iv.	*Staphylococcus aureus,* cfu/g, max.	10^2	ISO 6888

7.2 During handling, storage and transportation, effective measures shall be taken to prevent cross contamination with chemicals, microbial or physical contaminants.

8 Packaging

8.1 Cassava wheat composite flour shall be packaged in food grade material which will safeguard the hygienic, physical, nutritional and organoleptic qualities of the product.

8.2 The net weight of the packages for cassava wheat composite flour may be required to meet the relevant regulations of the destination country.

9 Marking and labelling

9.1 In addition to the requirements of ARS 56, cassava wheat composite flour shall be legibly and indelibly labelled with the following information:

a) Common name of the product “Cassava wheat composite flour”;

b) Percentage composition of cassava wheat flour shall be declared.;

c) Name, and physical address of the manufacturer/ distributor and /or trade name/ brand name;

d) List of ingredients in descending order;

e) Date of manufacture;

f) Storage instructions;

g) Lot / batch identification in code or clear;

h) Expiry date;

i) Country of origin;

j) The net weight in metric units; and

k) Instructions on disposal of used package.

9.2 When labelling non-retail packages, information for non-retail packages shall either be given on the packages or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the packages.

10 Sampling

Sampling shall be done in accordance with ISO 24333.

Annex A
(normative)

Determination of acid insoluble ash

A.1 Reagent

A.1.1 Dilute hydrochloric acid, 1:1, prepared from concentrated hydrochloric acid

A.2 Procedure

A.2.1 Weigh accurately about 2 g of the dried material in a tared porcelain, silica or platinum dish. Ignite with a meker burner for about 1 h. Complete the Ignition by keeping in a muffle furnace at 500 °C to 570 °C until grey ash results.

Cool and filter through whatman filter paper No. 42 or its equivalent. Wash the residue with hot water until the washings are free from chlorides as tested with silver nitrate solution and return the filter paper and residue to the dish. Keep it in an electric air oven maintained at 135 ± 2 °C for about 3 h. Ignite the dish again for about 30 min, cool and weigh. Repeat this process till the difference between two successive weighings is less than 1 mg. Note the lowest weight.

A.3 Calculation

A.3.1 Acid insoluble ash, per cent by weight

$$= \frac{100(M_2 - M)}{M_1 - M}$$

where

M_2 is the lowest weight, in g, of the dish with the acid insoluble ash;

M is the weight, in g, of the empty dish; and

M_1 is the weight, in g, of the dish with the dried product taken for the test.

Bibliography

EAS 741:2022, *Cassava composite wheat flour — Specification*

