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ICS 67.060

DRAFT EAST AFRICAN STANDARD

Rye flour — Specification

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 014, *Cereals, Pulses and their derived products*.

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

Introduction

This standard outlines the quality, composition, and handling requirements for rye flour to ensure consistency, safety, and suitability for various culinary and industrial uses. Rye flour may be **c**ategorized based on its extraction rate (e.g., whole rye flour, white rye flour, pumpernickel flour), with each type having specific characteristics that influence its use in baking and food production.

Rye flour is rich in fiber, particularly soluble fiber like beta-glucans, which can help lower cholesterol. It provides carbohydrates, protein, and important minerals like iron, magnesium, and zinc. Rye flour has a distinctive slightly sour flavor that can vary depending on the processing and the type of rye used and has less gluten-forming protein than wheat flour, which makes baked goods such as rye bread, crackers, and cereals denser and chewier. This is why rye breads, like pumpernickel, are typically more compact and moist. It absorbs more water than wheat flour, making the dough stickier and more challenging to handle. It is also used in the production of rye whiskey and some specialty beers

Nutritionally, rye flour is considered healthier than refined wheat flour due to its higher fiber content, which aids digestion and can help manage blood sugar levels. It has a lower glycemic index than wheat flour, making it a better choice for those managing blood sugar levels.

This standard also ensures that rye flour meets safety regulations, such as limits on contaminants and proper labelling, guaranteeing that consumers receive a product that is both high-quality and safe for consumption.

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Rye flours— Specification

1.0 Scope

This draft East Africa Standard specifies the requirements, sampling and test methods for rye flour derived from rye grains of varieties grown from common rye (*Secale cereale L*.) intended for human consumption.

2.0 Normative references

The following documents are 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.

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

CXS 192, *General standard for Food Additives*

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

EAS 39*, Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 900*, Cereals and pulses — Sampling*

EAS 901*, Cereals and pulses — Test methods*

ISO 6579-1*, Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.*

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

ISO 16649-2*, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

ISO 21527-2*, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0,95*

3.0 Terms and definitions

For the purposes of this document, the following terms and definitions apply.
ISO and IEC maintain terminological databases for use in standardization at the following addresses:
— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
whole rye flour
darker colored, coarser textured, and higher fiber flour produced by milling the whole rye grain (*Secale cereale*), including the outer bran, the germ, and the endosperm.

3.2
pumpernickel flour
is a coarse, dark dense textured flour with distinctive flavour produced by grinding, slow roasting or fermenting whole rye grains, to retain the grain's bran and germ.

3.3
white rye flour
refined flour made from the endosperm of rye grains (*Secale cereale*), where the bran and germ have been separated during milling. It is characterized by its lighter color, finer texture, and milder flavor compared to whole rye flour or pumpernickel flour.

3.4 foreign matter/ extraneous matter
all organic and inorganic material other than Rye flour

3.5 inorganic matter
stones, glass, pieces of soil and other mineral matter

3.6 organic matter
any animal or plant matter (seed Rye flours, straws, weeds) other than Rye flour

3.7
food grade packaging material
material which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product

3.8 filth
impurities of plant and animal origin including dead insects, rodent hair and excreta

4 Requirements

4.1 General requirements

4.1.1 Rye flour shall be:

a) clean, wholesome, uniform fine granulation,

b) characteristic colour of the product

c) free from abnormal flavour, musty, or other undesirable odour;and;

d) free from live pests

. 4.2 Specific requirements

Rye flour shall comply with the specific requirement given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for Rye flour

S/N	Characteristic	Requirements				Test method
		White rye flour	Pumpernickel flour	Whole rye flour		
i.	Moisture content, max.%, m/m	14	14	14		EAS901
ii.	Crude fibre content, max.%, m/m	1.0	1.0	1.0		ISO 5498

iii.	Total ash content, max.%, m/m	0.7	0.8	0.8		ISO 2171
iv.	Residue on sieving through 180-micron sieve, max %	0.5	0.8	0.8		EAS901
v.	Crude protein content, min. % m/m	8.0	9.0	8.0		EAS901,
vi.	Filth,%m/m,m max	0.1				

5.0 Food additives

Rye flour may contain food additives in accordance with CODEX STAN 192.

6.0 Hygiene

6.1 Rye flour shall be produced, prepared and handled in accordance with EAS 39

6.2 Rye flour shall comply with microbiological limits given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Microbiological limits for Rye flours

S/N	Micro-organism	limit (max)	Test method
i.	*Escherichia coli*, cfu/g, max	Absent	ISO 16649-2
ii.	*Salmonella*, in 25 g	Absent	ISO 6579-1
iii.	Yeast and moulds, cfu/g, max	10^4	ISO 21527-2
iv.	*Staphylococcus aureus*, cfu/ g,max	10^2	ISO 6888-1

7.0 Contaminants

7.1 Pesticide residues

Rye flour shall comply with pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

7.2 Heavy metals

Rye flour shall comply with limits for heavy metals as stipulated in CXS 193

7.3 Mycotoxin

Rye flour shall comply with the maximum limits for mycotoxins given in Table 3 when tested in accordance with the test methods prescribed therein.

Table 3 — Mycotoxin limits for Rye flour

S/No	Mycotoxin	limit (max)	Test method
i.	Total aflatoxins µg/kg	10	EAS 901
ii.	Aflatoxin B_1, µg/kg	5	

8.0 Packaging

Rye flour shall be packaged in food grade packaging material which safeguards the hygienic, nutritional and organoleptic qualities of the product.

9.0 Labelling

In addition to the requirements in EAS 38, each package shall be legibly and indelibly labelled with the following:

a) product name as 'whole rye flour, pump nickel rye flour, white rye flour'

b) name, address and physical location of the producer/ packer/importer;

c) lot/batch/code number;

d) net weight, in metric units;

e) the declaration "Food for Human Consumption'';

f) storage instruction';

g) date of manufacture;

h) best before date;

i) instructions for use and on disposal of used package; and

j) country of origin.

9.2 Each container may be marked with the standards mark of quality.

9.3 Labelling of non-retail containers

Information detailed in 9.1 shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the processor or packer as well as storage instructions, shall appear on the container.
However, lot identification and the name and address of the processor or packer may be replaced by an identification mark provided that such a mark is clearly identifiable with the accompanying documents

10.0 Sampling

Sampling shall be done in accordance with EAS 900

Bibliography

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