



**DRAFT EAST AFRICAN STANDARD**

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**Wheat and Durum wheat semolina - 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 East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Partner States in the Community through their National Bureaux of Standards, have established an East African Standards Committee.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

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.

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PUBLIC REVIEW DEAS282

## Wheat and Durum wheat semolina – Specification

### 1. Scope

This draft East African Standard specifies requirements, sampling and test methods for wheat semolina prepared from common wheat (*Triticum aestivum* L) or club wheat (*Triticum compactum* host) mixtures thereof, or to mixtures of these wheats in combination with durum wheat (*Triticum durum* desf) and durum wheat semolina prepared from durum wheat (*Triticum durum* desf), intended human consumption.

This draft East African Standard does not apply to wheat and durum wheat semolina for non-food industrial or animal feed 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 900, Cereal and Pulses— Sampling*

*EAS 901, Cereal and Pulses— Test Methods*

*CXS 192, General standard for Food Additives*

*CXS 199-1995 Standard for wheat and durum wheat*

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

### 3. Terms and Definition

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

#### 3.1

##### **filth**

impurities of animal origin, (including dead insects)

#### 3.2

##### **food grade packaging materials**

packaging material, made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

#### 3.3

##### **durum wheat semolina**

Product prepared from grains of durum wheat by grinding or milling process in which the bran and the germ are essentially removed and the remainder portion is comminuted to as suitable degree of fineness.

#### 3.4

##### **whole durum wheat semolina**

product prepared from grains of durum wheat by grinding or milling in which the bran and the germ are retained

**3.5****wheat semolina**

product prepared from grains of common wheat, *Triticum aestivum* L, or club wheat, *Triticum compactum* Host. Or mixtures thereof, by grinding or milling process in which the bran and the germ are essentially removed and the remainder portion is comminuted to a suitable degree of fineness.

**3.6****whole wheat semolina:**

product prepared from grains of common wheat, *Triticum aestivum* L, or club wheat, *Triticum compactum* Host. or mixtures thereof, by grinding or milling process in which the bran and the germ are retained.

**4. Requirements****4.1. Raw Materials**

Wheat and durum wheat semolina shall be obtained from dried mature grains of *Triticum durum* defs complying to the CXS199'

**4.2 General Requirements**

The wheat and durum wheat semolina

- (a) shall be clean, safe, suitable and of good quality.
- (b) It shall have a characteristic colour, smell and taste.
- (c) It shall be free from musty or off odour, insect or fungal infestation, rodent contamination, dirt and other extraneous matter.

NOTE The appearance, taste and odour shall be determined by organoleptic testing.

- (d) be free from living insects, worms, filth, and foreign matter

**4.3 Nutrients**

In case of any addition of vitamins, minerals and specific amino acids shall be in conformity with those approved by Codex Alimentarius Commission.

**4.4 Specific Requirements**

**4.4.1** Wheat and durum wheat semolina shall comply with the requirements given in Table 1 when tested in accordance with the test methods specified therein

**Table 1 — Specific Requirements for Wheat and durum wheat semolina'**

S/N	Characteristic	Durum Wheat Semolina Requirement	Wheat Semolina requirements	Whole Durum Wheat Semolina	Whole Wheat Semolina	Method of test
(i)	Moisture content, % by mass, max.	14.0				EAS 901
(ii)	Acid insoluble ash (on dry basis) % by mass, max.	0.05				
(iii)	Alcohol acidity (as H <sub>2</sub> SO <sub>4</sub> ), with 90 % alcohol, %by mass, max.	0.1				Annex C
(iv)	Fatty acidity (KOH),		[80]	50		

	max					
(v)	Protein (on dry basis), % by mass, min.	10.5	10.5	11.5		EAS 901
(vi)	Gluten (on dry basis), % by weight, max.	6.0				Annex B
(vii)	Crude fibre content, % m/m, max.		2.5			
(viii)	Granularity, pass through sieve, %m/m, max	[80 315um] or [98 355micron]	79 315um	79 315um		

**4.1.2 Particle size** — When tested by the method prescribed in the Annex A.

- i. all the material shall pass through a 1.18 mm sieve; and
- ii. not less than 98 percent of the material shall be retained on a 355 micron sieve.

## 5.0 Food Additives

Wheat and Durum wheat semolina may contain only the permitted food additives in the CXS192

## 6.0 Hygiene

6.1 Durum wheat semolina shall be prepared and handled in accordance with EAS 39.

6.2 Durum wheat semolina shall comply with microbiological limits given in Table 2 when tested in accordance with the test methods specified therein.

**Table 2 Microbiological limits for wheat and durum wheat semolina**

S/N	Microorganism	Limit	Test method
i.	Total aerobic CFU/ g, max.	10 <sup>5</sup>	ISO 4833-1
ii.	Yeast and moulds CFU/g, max.	10 <sup>4</sup>	ISO 21527-2

## 7.0 Contaminants

### 7.1 Pesticide residues

Wheat and durum wheat semolina shall comply with pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

### 7.2 Heavy metals

Wheat and durum wheat semolina shall comply with limits for heavy metals as stipulated in CXS 193.

### 7.3 Mycotoxins

Wheat and durum wheat semolina shall comply with limits for mycotoxins as stipulated in CXS 193

## 8.0 Packaging

8.1 Wheat and durum wheat semolina shall be packed in food grade packaging material which will safeguard the hygienic, nutritional and organoleptic qualities of the products.

8.2 Each package shall be securely closed and sealed.

## 9.0 Labeling and marking

In addition to the labeling requirements as stipulated in EAS 38, the wheat and durum wheat semolina shall be legibly and indelibly marked with the following information;

- a) name of product as “wheat semolina’ and/or durum wheat semolina”; and address of manufacturer,
- b) batch or code number,
- c) net mass in metric units,
- d) expiry date (Best before),
- e) country of origin,
- f) the statement “human food”,
- i) the wording “store in cool, dry place”,
- j) the statement “use no hooks” where applicable.

## 10. Sampling

Sampling shall be done in accordance with EAS 900.

**Annex A**  
(normative)

**Determination of particle size**

**A.1 Sieves**

Make a nest of 2 sieves, the upper having a designation of 1.18 mm and the lower 355 micron sieve with a cover on top of the upper sieve and a receiver below the lower sieve.

**A.2 Procedure**

Weigh accurately about 100 g of the material into the upper sieve and fit it with the cover. Shake the nest of sieves with receiver thoroughly and ensure that all the material on upper sieve has passed through it. Stop shaking; remove the nest of sieve and examine the upper sieve to be assured that all the material has passed through it. Transfer the residues on the lower sieve to a tared weighing dish using a brush and weigh the dish.

**A.3 Calculation**

Material retained on 335 micron sieve percent by mass =  $\frac{m_2 \square 100}{m_1}$

where

$m_1$  = mass in g of the material taken for the test.

$m_2$  = mass in g of the material retained on 335 micron sieve.



## Annex B

## Determination of gluten

## B.1 Procedure

**B.1.1 Preparation of Material** — Grind about 100 g of the material in a mortar and pestle or in a suitable mechanical pulverizer. Sieve through a fine treble extra silk with an aperture of 0.16 mm and collect the material that has passed through. Use this preparation for the determination of gluten.

**B.1.2** Weigh accurately into a dish about 25 g of the material. Add about 156 mL of water to the material and make it into a dough, taking care to see that all the material is taken into the dough. Keep the dough gently in a beaker filled with water and let it stand for one hour. Remove the dough and place it in a piece of bolting silk cloth with an aperture of 0.16 mm size, and wash it with a stream of tap water till water passing through the silk does not turn blue when a drop of iodine solution is added to it. Spread the silk tight on a porcelain plate to facilitate scrapping. Transfer the residue from the silk by means of a spatula, to a tared porcelain dish. Spread the wet gluten into a thin layer and out into small pieces. Transfer any sticking to the spatula into the porcelain dish. Place the porcelain dish in an air-oven maintained at  $135 \pm 2$  °C. Dry for two hours, cool in a desiccator and weigh.

## B.2 CALCULATION

$$\text{A.2.1} \quad \text{Gluten, on dry basis, \% by weight} = \frac{10\,000 (W_2 - W_1)}{W(100 - M)}$$

where,

$W_2$  = Weight in g of the dish with dry gluten;

$W_1$  = Weight in g of the empty dish;

$W$  = Weight in g of the material taken; and

$M$  = Percentage of the moisture in the sample.

## Annex C

## Determination of Alcoholic Acidity

**C.1 Reagent**

C.1.1 Neutral Ethyl Alcohol - 90 percent ( v/v ).

C.1.2 Standard Sodium Hydroxide Solution - approximately 0.05 N.

C.1.3 Phenolphthalein Indicator Solution - Dissolve 0.1 g of phenolphthalein in 100 ml of 60 percent ( v/v ) rectified spirit.

**C.2 Procedure**

- Weigh 5 g of sample into a conical stoppered flask and add 50 ml of neutral ethyl alcohol. Stopper, shake and allow to stand for 24 hours with occasional shaking. Filter the alcoholic extract through a dry filter paper. Titrate 10 ml of the combined alcoholic extract against standard sodium hydroxide solution using phenolphthalein as indicator. Calculate the percentage of alcoholic acidity as sulphuric acid.

**C.3 Calculation**

Alcoholic acidity ( as  $\text{H}_2\text{SO}_4$  ), with  
90 percent alcohol, percent by mass =  
 $24.52 \frac{A N}{M}$

M

where

A E volume in ml of standard sodium hydroxide solution used  
in titration,

N = normality of standard sodium hydroxide solution, and

M - mass in g of the material taken for the test.

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