

DRAFT TANZANIA STANDARD

Durum wheat semolina – Specification

DRAFT FOR STAKEHOLDERS COMMENTS

TANZANIA BUREAU OF STANDARDS

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0 FOREWORD

Durum wheat semolina prepared from wheat is an important ingredient in the manufacture of pasta products. This Tanzania Standard has been prepared in order to ensure safety and quality of semolina as raw material for production of quality pasta products.

In the preparation of this Tanzania Standard considerable assistance was derived from the following:

- 1) IS 1010: 1968 – *Specification for suji or rava (semolina)*, published by the Indian Standards Institution; and
- 2) CODEX STAN 178 - 1991 Rev 1- 1995 *Durum wheat semolina and durum wheat flour*, published by the Codex Alimentarius Commission.

1 SCOPE

This Tanzania Standard prescribes requirements, methods of sampling and test for durum wheat semolina prepared from durum wheat (*Triticum durum* desf) suitable for human consumption. It does not apply to any product prepared from common wheat (*Triticum aestivum* L) or club wheat (*Triticum compactum* host) or mixtures thereof or to mixtures of these wheats in combination with durum wheat (*Triticum durum* desf)".

2 REFERENCES

The following referenced standards are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standards (including any amendments) applies:

TZS 330 – *Cereals – Sampling of milled products*

TZS 331 – *Methods of test for milled products*

TZS 109 – *Code of hygiene for food processing units – General*

TZS 731 – *Microbiology of food and feeding stuffs – Horizontal method for the detection and enumeration of presumptive Escherichia Coli – Most Probable Number Technique*

TZS 122 - *Microbiology of food and feeding stuffs – Horizontal method for the detection of salmonella spp.*

TZS 131 - *Microbiology of food and animal feeding stuffs: General guidance for enumeration of yeasts and moulds- Colony Count technique at 25°C*

TZS 538 *Packaging and labeling of foods*

Codex Stan 193-1995 codex general standard for contaminants and toxins in food and feed

3 TERMS AND DEFINITIONS

3.1 durum wheat semolina

product prepared from grain of durum wheat (*Triticum durum* desf.) by grinding or milling processes in which the bran and germ are essentially removed and the remainder is comminuted to a suitable degree of fineness.

3.2 extraneous matter

Organic and inorganic materials other than durum wheat semolina.

4 REQUIREMENTS

4.1 General requirements

4.1.1 Raw materials

The wheat from which durum wheat semolina is milled shall be sound, clean and of marketable quality.

4.1.2 The durum wheat semolina shall:

- a) be clean, safe, suitable and of good quality;
- b) have a characteristic colour, smell and taste; and
- c) 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.

4.1.3 Processing

All processing of the wheat, including drying, milling and other treatments of the wheat; intermediate milling products, and milled semolina shall be carried out in a manner that

- a) minimizes loss of nutritive value, particularly protein quality and
- b) avoids undesirable changes in technological properties of the semolina.

4.1.4 Particle size

When tested by the method prescribed in annex A, semolina shall be classified as coarse or fine as follows:

a) Coarse semolina

- i. All materials shall pass through a sieve of 1180micron.
- ii. Not less than 98% of the materials shall be retained on a sieve of 250micron.
- iii. Not less than 98% of the material shall be retained on a 355 micron sieve.

b) Fine semolina

- i. All materials shall pass through a sieve of 1180micron
- ii. Not less than 70 % of the materials shall be retained on a sieve of 250micron.

4.2 Specific requirements

4.2.1 The durum wheat semolina shall comply with the requirements prescribed in Table 1.

Table 1 – Requirements for durum wheat semolina

Characteristic	Requirement	Methods of test TZS 331 (see clause 2)
a) Moisture, % <i>m/m</i> , max.	13.5	Clause 5
b) Total ash (on dry basis) % <i>m/m</i> , max.	1.0	Clause 6
c) Acid insoluble ash (on dry basis) % <i>m/m</i> , max.	0.05	Clause 7
d) Protein (on dry basis) % <i>m/m</i> , min.	10.5	Clause 13
e) Alcoholic acidity (as H ₂ SO ₄) with 90 per cent alcohol, % <i>m/m</i> , max.	0.1	Clause 12

5 CONTAMINANTS

5.1 Heavy metals

Durum wheat semolina shall comply to those maximum limits for heavy metals established by the Codex (Codex Stan 193-1995) for this commodity.

5.2 Pesticide residues

Durum wheat semolina shall conform to those maximum pesticide residue limits established by the Codex (Codex Pesticides Residues in Food Database) for this commodity.

5.3 Mycotoxins

Durum wheat semolina shall conform to those maximum mycotoxin limits established by the Codex (Codex Stan 193-1995) for this commodity. In particular, aflatoxin levels in durum wheat semolina shall not exceed 10 µg/kg for total aflatoxins; and 5 µg/kg for aflatoxin B₁.

6 HYGIENE

6.1 Durum wheat semolina shall be produced, prepared and handled in accordance with TZS 109 (See clause 2).

6.2 The durum wheat semolina shall be free from pathogenic micro-organism and shall conform to the microbiological requirements prescribed in Table 2.

Table 2 Microbiological requirements for durum wheat semolina

Characteristic	Requirement	Methods of test
<i>Escherichia coli</i> , MPN, per 1 g, max.	Absent	TZS 731
<i>Salmonella</i> per 25 g	Absent	TZS 122
Yeast and Moulds cfu/g, max.	10 ⁴	TZS 131

7 SAMPLING AND TESTS

7.1 Sampling

Durum wheat semolina shall be sampled as prescribed in TZS 330 (See clause 2).

7.2 Tests

7.2.1 Tests shall be done as per test methods prescribed in the respective tables of this standard.

7.2.2 Quality of reagents

Unless specified otherwise, pure analytical grade chemicals and distilled water shall be used in tests.

8 PACKAGING, LABELING AND MARKING

8.1 Packaging

Durum wheat semolina shall be packed in suitable new bags made of paper, jute or polyethylene capable of maintaining the quality of the product. The mouth of each bag shall be properly stitched.

8.2 Labelling and marking

8.2.1 The product shall be marked and labeled in accordance with TZS 538 (see clause 2).

8.2.2 In addition each Container/packet of product shall be legibly and indelibly marked with the following information:

- a) name of the product, (durum wheat semolina);
- b) name and address of manufacturer;
- c) batch or code number;
- d) net weight in metric units;
- e) production date;
- f) expiry date (Best before);
- g) country of origin;
- h) the statement "human food";
- i) the wording "store in cool, dry place"; and
- j) the statement "use no hooks".
- k) Language used shall be Kiswahili or Kiswahili and English....

8.2.3 The containers may also be marked with the TBS Mark of Quality.

NOTE - The TBS Mark of Quality may be used by the packers only under licence from TBS. Particulars of conditions under which the licenses are granted, may be obtained from TBS.

Annex A

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 CALCULATIONS

Material retained on 335 micron sieve percent by mass

$$= \frac{m_2 \times 100}{m_1}$$

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.