



DRAFT TANZANIA STANDARD

Pumpkin seeds – Specification

DRAFT FOR STAKEHOLDERS COMMENTS ONLY

Pumpkin seeds – Specification

0 Foreword

Pumpkin seeds refers to the edible seeds of a pumpkin (*Cucurbita pepo L.*). Pumpkin seeds are rich in lipids, protein and crude fiber. In addition, the seed is a good source of minerals like phosphorous, sodium, calcium, copper, zinc, magnesium, potassium and iron that are important for our health.

This Tanzania Standard is intended to guide farmers/traders in achieving quality of pumpkin seeds required for internal and external market.

In reporting the results of a test or analysis made in accordance with this Tanzania Standard, if the final value observed or calculated is to be rounded off, it shall be done in accordance with TZS 4.

1 Scope

This Tanzania Standard specifies requirements and methods of sampling and test for seeds obtained from pumpkin (*Cucurbita pepo L.*) intended for human consumption or for other use in the food industry.

2 Normative references

The following referenced documents 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 document (including any amendments) applies:

Codex Stan 193, *General Standard for Contaminants and Toxins in Food and Feed*

TZS 4, *Rounding off numerical values*

TZS 109, *Food processing units – Code of hygiene – General*

TZS 122, *Microbiology of food and feeding Stuffs – Horizontal method for the detection of Salmonella spp*

TZS 131, *Microbiology – General guidance for enumeration of yeast and moulds – Colony count technique at 25 °C*

TZS 538, *Packaging and labeling of foods*

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

TZS 742, *Oleaginous seeds – Sampling*

TZS 799, *Foodstuffs – Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products – High-performance liquid chromatographic method*

TZS 1314 – 1, *Oilseeds – Determination of content of impurities*

TZS 1314 – 2, *Oilseeds – Determination of moisture and volatile matter content*

TZS 1314 – 3, *Oilseeds – Determination of oil content (Reference method)*

TZS 1314 – 4, *Oilseeds – Determination of acidity of oils*

3 Terms and definitions

For the purposes of this Tanzania Standard, the following terms and definitions shall apply:

3.1 pumpkin (*Cucurbita pepo* L.)

hard and roundish fruit vegetable of the squash family that usually comes in a bright orange color or also green and yellow depending on how ripe and grown it is.

3.2 pumpkin seed

edible seed of a pumpkin (*Cucurbita pepo* L.)

3.2 foreign matters

materials other than pumpkin seeds.

3.3 moisture and volatile matters

loss of mass of a test piece, when dried under specified conditions.

3.4 oil content

amount of oil in the seed expressed as percentage mass by mass

3.5 acid value

number of milligrams of potassium hydroxide required to neutralize the free fatty acids present in 1 g of fat.

4. Requirements

4.1 General requirements

Pumpkin seeds shall be:

- a) dry and uniform in size, flat and oval in shape;
- b) free from dead or living insects, insect fragments and mites;
- c) free from foreign matter such as stones, dirt or any contamination;
- d) free from foreign odours and undesirable flavour and/or taste; and
- e) free from decayed and mould-damaged seeds.
- f) free from genetic modified materials

4.2 Specific requirements

Pumpkin seeds shall comply with specific requirements given in Table 1 when tested in accordance with the methods specified therein;

Table 1- Specific requirements for pumpkin seeds

S/N	Characteristic	Requirement	Test methods TZS 1314 Part
i)	Moisture content,% (m/m) max.	8.0	2
ii)	Oil content on moisture free basis,%,(m/m),min.	12	3
iii)	Acid value of extracted oil%(m/m), max.	0.52	4
iv)	Foreign matter %(m/m), max.	0.05	1

5 Contaminants

5.1 Metal contaminants

Pumpkin seeds shall comply with those maximum metal contaminants stipulated in CODEX STAN 193.

5.2 Pesticide residues

Pumpkin seeds shall comply with those maximum residue limits established by the Codex Alimentarius Commission.

5.3 Mycotoxins

Pumpkin seeds shall comply with the level of mycotoxins specified in Table 2 when tested in accordance with the methods specified therein;

Table 2- Mycotoxins limits for pumpkin seeds

S/N	Mycotoxin	Maximum limit	Method of test
i)	Total aflatoxin	10 µg/kg	TZS 799
ii)	aflatoxin B1	5 µg/kg	TZS 799

6 Hygiene

6.1 Pumpkin seeds shall be produced, processed, handled and stored in accordance with TZS 109.

6.2 Pumpkin seeds shall comply with microbiological limits specified in Table 3 when tested in accordance with the methods specified therein;

Table 3 - Microbiological limits for pumpkin seeds

S/No	Organism	Maximum limit	Method of test
i)	<i>Escherichia coli</i> , MPN/g	Shall be absent	TZS 731
ii)	Salmonella per 25 g	Shall be absent	TZS 122
iii)	Yeast and Moulds cfu/g,max	10 ²	TZS 131

7 Sampling and methods of tests

7.1 Sampling

Sampling of pumpkin seeds shall be done in accordance with TZS 742.

7.2 Methods of test

Pumpkin seeds shall be tested in accordance with the methods specified in this standard..

8 Packaging, Marking and Labeling

8.1 Packaging

Pumpkin seeds shall be packed in suitable and hygienic food grade packaging materials which ensure that the safety and quality requirements specified in this standard are maintained throughout the shelf life of the product.

8.2 Marking and labeling

8.2.1 The product shall be marked and labeled in accordance with TZS 538.

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;
- b) Trade name or brand, if any;
- c) Name, address of the processor and/or packer;
- d) Batch or code number;
- e) Date of packing;
- f) Expiry date;
- g) Net weight;
- h) Country of origin;
- i) Year of harvest (Crop year)
- j) Storage conditions

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

NOTE – The TBS Standards Mark of Quality may be used by the manufacturers only under licence from TBS. Particulars of conditions under which the licences are granted, may be obtained from TBS.

9 Storage and Transportation

9.1 Storage

9.1.1 Pumpkin seeds shall be stored in a well ventilated environment and stacked on pallets to avoid moisture ingress. They shall be stored in leak proof warehouses.

9.1.2 Warehouses shall be free from pests.

9.2 Transportation

Pumpkin seeds shall be transported in well secured wagons/containers/trucks to avoid loss and spoilage