



DRAFT TANZANIA STANDARD

Raw Walnut Kernels – Specification

DRAFT FOR STAKEHOLDERS COMMENTS

Raw walnut kernels – Specification

0 Foreword

Walnut (*Juglans regia L.*) is considered as a high-quality food with human health benefits because walnut kernels are rich in proteins, unsaturated fatty acids, phospholipids, vitamins, minerals, essential fatty acids, and other nutrients. Walnuts are most often eaten on their own as a snack but can also be added to salads, pastas, breakfast cereals, soups, baked goods and other different food products.

This Tanzania standard lays down specifications aiming at ensuring the safety and quality of raw walnut kernels produced or traded in and outside the country for human consumption.

In preparation of this Tanzania standard considerable help was derived from: UNECE STANDARD DPP-02 *Walnut kernels* published by the United Nations, New York and Geneva, 2019.

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, methods of sampling and testing for raw walnut kernels obtained from walnut tree (*Juglans regia L.*) intended for human consumption or to be used in the food industry.

2 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;

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

TZS 2426 - 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 Terms and definitions

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

3.1 walnut

edible nuts obtained from varieties of the species *Juglans regia L*

3.2 raw walnut kernels

product obtained by deshelling nuts of varieties (cultivars) grown from *Juglans regia L*, and which have not been subjected to roasting and/or various forms of chemical treatment.

3.3 foreign matters

any organic or inorganic matter other than raw walnut kernels.

3.4 damaged kernels

walnut kernel which are damaged mechanically, or by mould or weevils, or those showing internal discoloration of kernels materially affecting their quality.

4. Requirements

4.1 General requirements

4.1.1 Raw walnuts kernels shall be sound, clean, matured and dry.

4.1.2 Raw walnut kernels shall be free from rancidity, mould, foreign smell and/or taste, living insects and mites.

4.1.3 Raw walnut kernels shall be free from dead insects, rodent contamination, insect fragments and damage caused by insect pests visible to the naked eye.

4.2 Specific requirements

Raw walnut kernels shall comply with specific requirements given in Table 1 when tested in accordance with the methods specified therein;

Table 1- Specific requirements for raw walnut kernels

S/N	Characteristic	Requirement	Test methods
i)	Moisture content,% (m/m) max.	5	TZS 1314 – 2
ii)	Free fatty acids as oleic %, m/m, max.	1.25	TZS 1314 – 4
iii)	Damaged kernels % by mass, max.	2	TZS 1314 – 1
iv)	Foreign matters, % by mass, max.	0.1	TZS 1314 – 1

5. Contaminants

5.1 Heavy Metal contaminants

Raw walnut kernels shall comply with those maximum metal contaminants stipulated in CODEX STAN 193.

5.2 Pesticide residues

Raw walnut kernels shall comply with those maximum residue limits established by the Codex Alimentarius Commission.

5.3 Mycotoxin

Raw walnut kernels shall conform to those maximum mycotoxin limits established by the Codex alimentarius Commission.

5.3.1 Aflatoxin

In particular aflatoxin level for raw walnut kernels shall not exceed maximum limits as given in Table 2 when tested in accordance with test method specified therein:

Table 2- Aflatoxin limits for raw walnut kernels

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

6 Hygiene

6.1 Raw walnut kernels shall be processed, handled and stored in accordance with TZS 109.

6.2 Raw walnut kernels shall comply with microbiological limits specified in Table 3 when tested in accordance with the methods specified therein;

Table 3 - Microbiological limits for raw walnut kernels

S/No	Microorganism	limit	Method of test
i)	Yeast and Moulds cfu/g,max	10 ³	TZS 2426 - 2
ii)	<i>Escherichia coli</i> , MPN/g	absent	TZS 731
iii)	Salmonella per 25 g	absent	TZS 122

7 Sampling and methods of test**7.1 Sampling**

Sampling of raw walnut kernels shall be done in accordance with TZS 742.

7.2 Methods of test

Raw walnut kernels shall be tested in accordance with the methods specified in table 1,2 and 3 in this standard.

8 Packing, Marking and Labeling

8.1 Packing

Raw walnut kernels 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. In addition each container/packet of product shall be legibly and indelibly marked with the following information:

- a) Name of the product as 'Raw walnut kernels'
- b) Trade name or brand, if any;
- c) Name, address of the processor and/or packer;
- d) Batch or lot number;
- e) Date of packing;
- f) Expiry date;
- g) Net weight in metric unit;
- h) Country of origin;
- i) Storage conditions
- j) Instruction on disposal of used packages

8.2.2 Language on the label shall be in Kiswahili or Kiswahili and English. A second language may be used depending on the designated market

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

NOTE - The TBS Standards Mark of Quality shall be used by the manufacturers only under license from TBS. Particulars of conditions under which the licenses are granted, shall be obtained from TBS.