



DRAFT TANZANIA STANDARD

Raw Brazil nut kernels – Specification

Draft for stakeholders comments

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0 Foreword

Brazil nut kernels are obtained from brazil nut tree (*Bertholletia excelsa* L.). Raw Brazil nuts kernels can be consumed directly as a snack or in mixed-ingredient snacks without further processing, salting, sugaring, flavoring or roasting. They also combine perfectly with confectionary and baked foods.

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

In preparation of this Tanzania standard considerable help was derived from UNECE Standard- DDP 27 Brazil nut kernels.

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 the requirements, sampling and test methods for raw Brazil nut kernels derived from Brazil nut tree (*Bertholletia excelsa* L.) intended for direct human consumption.

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 192

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 730-2 / ISO 16649-2, *Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of -b-glucuronidase-positive Escherichia coli – Part 2 – Colony-count technique at 44 °C using 5-bromo-4-chloro-3-indolyl-b-D-glucuronide*

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 raw Brazil nut kernels

product obtained by removing the shell of the Brazil nut

3.2 foreign matter

any visible and/or apparent matter or material not usually associated with the raw Brazil nut kernels

3.3 damaged kernels

raw Brazil nut kernels which are damaged mechanically, or by mould or weevils, or those showing internal discoloration of kernels significantly affecting the quality.

3.4 immature kernels

Brazil nut kernels which are not fully developed

4. Requirements

4.1 General requirements

- (i) Raw Brazil nut kernels shall be whole, mature and uniform in size;
- (ii) Raw Brazil nut kernels shall be free from rancid odour and taste;
- (iii) Raw Brazil nut kernels shall be free from insects, rodent contamination and insect fragments.

4.2 Specific requirements

Raw Brazil nut 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 Brazil nut kernels

S/N	Characteristic	Requirement	Test methods
i)	Moisture content, %, m/m, max.	5	TZS 1314 – 2
ii)	Acid value, %, m/m, max.	3	TZS 1314 – 4

4.3 Grading requirements

4.3.1 Where classification is required, raw Brazil nut kernels may be graded based on size and defects allowed.

4.3.2 When classified based on size, the raw Brazil nut kernels shall comply with the requirements given in Table 2, when tested in accordance with the test method specified therein.

Table 2-Sizing requirements for raw Brazil nut kernels

S/N	Size code /count	Kernels per kg	Kernels per pound
i)	Large or giants	176-242	80-110
ii)	Mediums	242-286	110-130
iii)	Smalls	308-352	140-160
iv)	Midgets	352-396	160-180
v	Tiny	396-484	180-220

4.3.3 When classified based on defects, the raw Brazil nut kernels shall comply with the requirements given in Table 3, when tested in accordance with the test method specified therein;

Table 3 - Grading requirements for raw Brazil nut kernels

S/N	Characteristic	Requirement			Test methods
		Extra class	Class I	Class II	
i)	Immature kernels,%, m/m, max.	1	1	2	TZS 1314 – 1
ii)	Damaged kernels, %, m/m, max.	1	2	3	
iv)	Foreign matters, % by mass, max.	0.5	1	1	

NOTE- The maximum total tolerance limits for Grade 1 is 8%, 12 % for Grade 2 and 15% for Grade 3 by number or weight for raw Brazil nut kernels corresponding to the size immediately above and/or below that indicated on the package.

5 Food Additives

The use of food additives in raw Brazil nut shall comply with the latest Codex Stan 192.

6 Hygiene

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

6.2 Raw Brazil nut kernels shall comply with microbiological limits given in Table 4 when tested in accordance with the methods specified therein;

Table 4 – Microbiological limits for Raw Brazil nut kernels

S/N	Microorganism	Limit	Test method
ii	<i>Salmonella</i> spp per 25 g	absent	TZS 122-1
iii	<i>Escherichia coli</i> cfu/g	absent	TZS 730-2
iv	Yeast and moulds, cfu/g, max.	10 ³	TZS 2426-2

7. Contaminants

7.1 Heavy Metal Contaminants

Raw Brazil nut kernels shall comply with maximum limits for heavy metal contaminants stipulated in Codex Stan 193.

7.2 Pesticide residues

Raw Brazil nut kernels shall comply with maximum residue limits established by Codex Alimentarius Commission online database for pesticide residues for this commodity

7.3 Aflatoxin

Aflatoxin limits for Raw Brazil nut kernels shall not exceed maximum limits as given in Table 5 when tested in accordance with test method specified therein:

Table 5- Aflatoxin limits for Raw Brazil nut kernels

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

8 Sampling and methods of test

8.1 Sampling

Sampling of Brazil nut kernels shall be done in accordance with TZS 742.

8.2 Methods of test

Brazil nut kernels shall be tested in accordance with the methods specified in this Tanzania standard.

9 Packaging, Marking and Labeling

9.1 Packaging

Raw Brazil nut kernels shall be packaged in containers made from food grade packaging material and sealed in a manner that will safeguard the hygienic, safety, nutritional and organoleptic properties of the product.

9.2 Marking and labeling

9.2.1 In addition to the labelling requirements given in TZS 538, packages/containers of Raw Brazil nut kernels shall be labelled legibly and indelibly with the following information:

- a) Name of the product as 'Raw Brazil nut kernels';
- b) Trade name or brand, if any;
- c) Name, physical address of the producer 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) List of ingredients in descending order, including the specific name of additives;

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

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

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