

**KENYA STANDARD**

DKS 2992:2023

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First Edition

## Hazelnut Kernels— Specification



Kenya Bureau of  
Standards

Standards for Quality life

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The following organizations were represented on the Technical Committee:

Agriculture and Food Authority - Nuts and Oil Crops Directorate

Consumer Information Network

Government Chemist's Department

Jungle Nuts Ltd.

Kakuzi PLC

Kenya Agricultural and Livestock Research Organization (KALRO)

Kenya Industrial Research and Development Institute

Kenya Nut Company Limited

Kenya Plant Health Inspectorate Service (KEPHIS)

Ministry of Health

Sagana Nuts Limited

SGS Kenya Limited

Syncom Food Consultancy Ltd.

Tensenses Africa EPZ Ltd.

Topnuts Enterprises Ltd.

Agventure Ltd

Healthy U 2000 limited

Kenya Bureau of Standards — Secretariat

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In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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## **Hazelnut Kernels — Specification**

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## **Foreword**

This Kenya Standard was prepared by the Edible Nuts and Seeds Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards

Hazelnuts are the edible nuts of the hazel tree (*Corylus avellana*) and are also known as filbert nuts. They are popular for their rich, nutty flavour and are used in a variety of culinary applications, including baking, cooking, and as a snack.

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

During the preparation of this standard, reference was made to the following document:

UNECE STANDARD DDP-04 HAZELNUT KERNELS published by the United Nations, New York, and Geneva.

Acknowledgement is hereby made for the assistance derived from this source

## Hazelnut Kernels — Specification

### 1 Scope

This draft Kenya standard specifies the requirements, sampling and testing methods for raw and roasted hazelnut kernels derived from hazelnut fruit (*Corylus avellana L.* and *Corylus maxima Mill* and their hybrids intended for human consumption.

This standard applies to shelled raw and roasted hazelnut kernels.

### 2 Normative references

CXG 66, Guidelines for the use of flavourings

CXS 192, General standard for food additives

CXS 193, General standard for contaminants and toxins in food and feed

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

KS EAS 803, Nutrition labelling — Requirements

KS EAS 804, Claims on foods — General requirements.

KS EAS 805, Use of nutrition and health claims — Requirements

KS ISO 665, Oilseeds — Determination of moisture and volatile matter content

KS ISO 729, Oilseeds — Determination of acidity of oils

KS ISO 6579-1, Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of *Salmonella* — Part 1: Detection of *Salmonella* spp.

KS ISO 6888-1, Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive *Staphylococci* (*Staphylococcus aureus* and other species) — Part 1: Method using Baird-Parker agar medium

KS ISO 16050, Foodstuffs — Determination of aflatoxin B<sub>1</sub>, and the total content of aflatoxins B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub> in cereals, nuts and derived products — High-performance liquid chromatographic method

KS ISO 16649-2, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive *Escherichia coli* — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide

KS ISO 21294, Oilseeds — Manual or automatic discontinuous sampling

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1

##### **Hazelnut**

edible nuts obtained from varieties of the species *Corylus avellana*

#### 3.2

##### **shelled hazelnut kernels**

raw hazelnuts with their shells removed and which have not been subjected to roasting and/or various forms of chemical treatment

#### 3.3

##### **roasted hazelnuts**

hazelnuts with their shells removed which have been subjected to heat

#### 3.4

##### **damage/defects**

kernel, which is damaged mechanically, or by mould or insects, or those showing internal discoloration of kernels materially affecting the quality'.

#### 3.6

##### **other defects**

hazelnut kernel that has skin discolouration, flesh discolouration and/or sprouted kernels

#### 3.7

##### **whole**

hazelnut kernel which is not split or broken

#### 3.8

##### **split**

separated 'half' of a hazelnut kernel

#### 3.9

##### **broken**

more than one fourth of the hazelnut kernel is broken off

## 3.10

**foreign matter**

Any visible and/or apparent matter or material not usually associated with raw or roasted hazelnut kernels.

**4 Requirements****4.1 General requirements**

Raw and roasted hazelnut kernels shall be.

4.1.1 practically free of any visible foreign matter

4.1.2 clean, matured, and dry.

4.1.3 free from rancid and undesirable foreign odour and taste,

4.1.4 free from live or dead insects, rodent contamination, and insect fragments

**4.2 Specific requirements**

4.2.1 Raw and roasted hazelnut 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 and roasted hazelnuts**

S/N	Characteristic	Requirement	Test Method
1.	Moisture content, %, m/m, max.	Raw Kernels	6.0
		Roasted kernels	5.0
2.	Free fatty acids, %, m/m, max.	2	KS ISO 729



## 5 Grading

Raw hazelnuts may be graded according to Annex A.

## 6. Food additives

Food additives when used in hazelnut kernels shall comply with CXS 192.

## 7 Flavouring agents

Flavouring agents when used in hazelnut kernels shall comply with CXG 66.

## 8 Contaminants

### 8.1 Aflatoxin

Aflatoxin levels in hazelnut kernels shall not exceed the limits given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Aflatoxin limits for hazelnut kernels

S/No.	Aflatoxin	Maximum Limit µg/kg	Test Method
i)	Total Aflatoxin	10	KS ISO 16050
ii)	Aflatoxin B1	5	

### 8.2 Pesticide residues

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

### 8.3 Other contaminants

Hazelnut kernels shall comply with those maximum limits for other contaminants established in CXS 193.

## 9 Hygiene

9.1 Hazelnuts kernels shall be produced, prepared, and handled in accordance with KS EAS 39.

9.2 Hazelnut kernels shall comply with the microbiological requirements given in Table 3 when tested in accordance with the test methods specified therein.

**Table 3, Microbiological requirements for almond kernels**

S/No.	Characteristic	Requirement	Test Method
i)	Escherichia coli, CFU/g A	Absent	KS ISO 16649-2
ii)	Salmonella spp. in 25 g	Absent	KS ISO 6579-1
iii)	Staphylococcus aureus, CFU/g	Absent	KS ISO 6888

## 9 Packaging

Hazelnut kernels shall be packaged in food grade packaging material that will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

## 10 Labelling

### 10.1 General

In addition to the requirements given in KS EAS 38, the product shall be legibly and indelibly labelled with the following information:

- name of the product as “Raw hazelnuts” or “Roasted hazelnuts” and
- where grading is applied, it shall be in accordance to Annex A of this standard.

### 10.2 Nutrition labelling and health claims

Nutrition labelling and health claims shall comply with the requirements given in KS EAS 803, KS EAS 804 and KS EAS 805.

## 11 Sampling

Sampling shall be done in accordance with KS ISO 21294.

## Annex A

(Normative)

## Grading requirements for raw hazelnut kernels

Defects allowed	Tolerances allowed percentage of defective hazelnut kernels, by number or weight (with regard to the total hazelnut kernel weight basis)		
	Extra	Class I	Class II
Tolerances for produce not satisfying the minimum requirements of which no more than:	5	14	18
Not sufficiently developed including shrunken and shrivelled kernels	2	4	8
Mouldy	0.5	1.5	2.5
Rancid or damaged by pests, rotting, deterioration	2	4	6
of which rancid not more than	1	2	3
Damaged kernels and pieces not passing through a 5 mm round meshed sieve	3	8	10
Pieces passing through a 5 mm round meshed sieve	0.5	1	2
Living pests	0	0	0

<b>(b) Size tolerances</b>			
<b>For produce not conforming to the size indicated, if sized</b>			
<b>For round</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>For pointed and oblong</b>	<b>15</b>	<b>15</b>	<b>15</b>
<b>If sized with 1mm intervals</b>	<b>15</b>	<b>15</b>	<b>15</b>
<b>For round</b>			
<b>For pointed and oblong</b>	<b>20</b>	<b>20</b>	<b>20</b>
<b>c) Tolerances for other defects</b>			
<b>Foreign matter, loose shells, shell fragments, fragments of hull, dust (by weight)</b>	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>
<b>Twin kernels</b>	<b>2</b>	<b>5</b>	<b>8</b>
<b>Hazelnut kernels belonging to varieties or commercial types other than that indicated</b>	<b>10</b>	<b>10</b>	<b>10</b>

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