

**Black tea — Specification**

PUBLIC REVIEW DRAFT

**TECHNICAL COMMITTEE REPRESENTATION**

The following organizations were represented on the Technical Committee.

Egerton University  
Agriculture and Food Authority- Tea Directorate  
Ministry of Health — Public Health Department  
Government Chemist's Department  
Melvin Mash International Ltd  
Unilever Tea Kenya Ltd  
Kenya Plant Health inspectorate Service  
Finlays Tea  
Tea Research Foundation of Kenya  
Ministry of industry, Trade and cooperatives  
Kenya Agricultural and Livestock organization  
Ministry of Agriculture  
Kenya Tea Development Agency Ltd  
Institute of Packaging of Kenya  
Consumer Information Network  
Kenya Bureau of Standards- Secretariat

**REVISION OF KENYA STANDARDS**

In order to keep abreast with the progress in the 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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# DKS 65:2016

## Foreword

This Kenya Standard has been prepared by the Tea Technical Committee under the guidance of the Standards Projects Committee and it is in accordance with the procedures of the Kenya Bureau of Standards.

The need to revise this standard has arisen from the increased need to accommodate technological innovations and the desire to position the Kenya tea as high quality offering in the tea world market. Thus, there is a general need to address both economic and nutritional concerns. In the said dispensation, the standard promotes fair trade, safeguards the interests of the stakeholders and guarantees enhanced safety of the consumers.

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

ISO 1839: Sampling of tea.

ISO 1572: Preparation of ground tea sample.

ISO 3720: Black tea — Definitions and basic requirements.

ISO 11286; 2004: Tea classification by particle size.

ISO 16050: Determination of aflatoxin in foods.

Acknowledgement is hereby made for the assistance derived from these sources



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## Black tea — Specification

### 1 Scope

This Kenya Standard specifies requirements and methods sampling and test of black tea of the species *Camellia sinensis* (Linneaus) O. Kuntze. This standard does not apply to flavoured teas and decaffeinated black teas.

### 2 Normative references

The following publications contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated was valid. For undated references, the latest edition of the normative document referred to applies.

AOAC 942.17, Arsenic in foods Molybdenum blue method

AOAC 999.10, Lead, Cadmium, Copper, Iron, and Zinc in foods, Atomic Absorption Spectrophotometry after dry ashing

KS EAS 39, Code of practice for food hygiene in the food and drink manufacturing industry

KS ISO 1573; Tea – Determination of loss in mass at 103 °C

KS ISO 1839, Sampling of tea

KS ISO 3103; Tea – Preparation of liquor for use in sensory tests

KS ISO 18593; Microbiology of food and animal feeding stuffs – Horizontal methods for sampling techniques from surfaces using contact plates and swabs

KS ISO 4833-1; Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of microorganisms - Colony-count technique at 30 degrees C

KS ISO 21527; 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

KS ISO 16649-1; Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of betaglucuronidase-positive *Escherichia coli* – Part 1: Colony

count technique at 44 degrees C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucuronide

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

KS ISO 6579; Microbiology of food and animal feeding stuffs - Horizontal method for the detection of *Salmonella* spp

KS EAS 38, Labelling of pre-packaged foods

KS CODEX STAN 193, Codex general standard for contaminants and toxins in foods

KS ISO 8968-1, Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) -- Part 1: Technique using Baird Parker agar medium

KS ISO 15598; Tea- Determination of crude fibre

KS ISO 5498; Agricultural food products- Determination of crude fibre content- General Method

KS ISO 14502-2 (Tea – Methods for determination of substances characteristic of green and black tea – Part 2: Determination of catechins in green tea – Method using high performance liquid chromatography)

### 4 Requirements

## **DKS 65:**

### **4.1 General requirements**

For purposes of this standard, the following definitions shall apply:

#### **3.1 black tea**

tea derived solely and exclusively produced by acceptable processes (notably withering, leaf maceration, aeration and drying) from the tender shoots of varieties of the species *Camellia sinensis* (Linnaeus) O. Kuntze, known to be suitable for making tea for consumption as a beverage

#### **3.2 Extraneous matter**

Any material of tea origin such as twigs, bark and stems

#### **3.3 Foreign matter**

Any material which is not tea leaf, flavour used or fragments of tea plant e.g. sand, stones, metallic chips and any organic matter other than extraneous matter

#### **3.4 Contaminants**

Any physical or chemical or biological agent, foreign matter, or any other substances not intentionally added to food which may compromise food safety or suitability

#### **3.5 Adulterant**

Any material intentionally added that changes the original composition and compromises the quality and safety of black tea

#### **3.6 Filth**

Any material such as, but not limited to dead insects, rodents and their derivatives

#### **3.7 Taint**

Taste and odour foreign to tea

## **4 Requirements**

### **4.1 General requirements**

Black tea shall comply with the following:

- 4.1.1 Shall be of uniform colour.
- 4.1.2 Shall be of typical texture and appearance.
- 4.1.3 Shall have a typical flavour and taste.
- 4.1.4 Shall be free from unpleasant or repulsive odours but may have a typical aroma.
- 4.1.5 Shall be free from contaminants

**4.1.6** The tea shall have no taint and shall be reasonably free from extraneous matter. Liquor for assessment of taint shall be prepared by method specified in KS ISO 3103.

The assessment shall be described in the test report using terms defined in KS ISO 6078.

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### 4.2 Compositional quality requirements/limits

4.2.1 The black tea shall comply with the requirements/limits specified in Table 1.

**Table 1 — Chemical requirement for black tea.**

SL No.	Characteristic	Requirement	Methods of test
(i)	Moisture content %, m/m, max.	7.0	KS ISO 1573
(ii)	Water extract, percent (m/m) min.	32	KS ISO 9768
(iii)	Total ash, percent (m/m)	4-8	KS ISO 1575
(iv)	Water soluble ash, as percentage of total ash, min.	45	KS ISO 1576
(v)	Alkalinity of water-soluble ash (as KOH), percent (m/m)	1.0 <sup>a</sup> - 3.0 <sup>a</sup>	KS ISO 1578
(vi)	Acid-insoluble ash, percent (m/m),max.	1.0	KS ISO 1577
(vii)	Crude fibre, percent (m/m), max.	16.5	KS ISO 5498 or KS ISO 15598 <sup>b</sup>
(viii)	Total polyphenols (m/m), min	9.0	KS ISO 14502-1
(ix)	Total Catechins content%, (m/m),min	7	KS ISO 14502-2

<sup>a</sup> When the alkalinity of water-soluble ash is expressed in terms of millimoles of KOH per 100 g of ground sample, the limits shall be: 17.8 min.; 53.6 max.

<sup>b</sup> The specific method for the determination of crude fibre in tea is specified in ISO 15598, however for the purpose of routine estimation, the general method specified in ISO 5498 is adequate. In cases of dispute, the method of determination should always be that specified in ISO 15598. The requirement of 16.5 % mass fraction remains unchanged regardless of the method used.

### 4.3 Preparation of tea liquor for sensory analysis

Tea liquor for sensory analysis should be prepared in accordance to ISO 3103

## 5. Hygiene

5.1 It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of KS EAS 39, and other relevant Kenya standards and regulations. The products should comply with any microbiological criteria established in accordance with CAC/GL 21

5.2 The products shall comply with any microbiological criteria established in accordance with Table 2 below.

**Table 2- Microbiological limits for black tea**

SL No	Type of micro-organism	Limits	Test method
(i)	Yeasts cfu/ g, max	10 <sup>2</sup>	ISO 21527-2
(ii)	Moulds cfu/ g, max	10 <sup>3</sup>	
(iii)	Pathogenic <i>Staphylococcus aureus</i> cfu/ g, max	Absent	ISO 6888-1
(iv)	<i>E. Coli</i> , cfu/ g, max	Absent	ISO 7251
(v)	<i>Salmonella</i> spp, cfu/ 25 g, max	Absent	ISO 6579

## 8 Contaminants

The product covered by this standard shall comply with the maximum levels of CODEX STAN 193 and the maximum residue limits for pesticides established by the Codex Alimentarius Commission (CAC).

### 8.1 Heavy metals

Heavy metal contaminants, if present, shall comply with the limits specified in Table 2.

**Table 2 — Heavy metal contaminant limits in black tea**

SL No.	Parameter	Limit	Test method
i)	Arsenic (As), ppm, max.	0.15	AOAC 999.10
iv)	Cadmium (Cd), ppm, max.	0.1	AOAC 942.17
v)	Mercury (Hg), ppm, max.	0.02	AOAC 999.10
vi)	Zinc (Zn), ppm, max.	50	AOAC 942.17
vii)	Copper (Cu), ppm, max.	150	AOAC 942.17
viii)	Iron filings, ppm max.	50	KS 2160

### 8.2 Mycotoxin residues

Total aflatoxin levels in black tea shall not exceed 10 ppb with B 1 not exceeding 5 ppb when tested according to KS ISO 16050

### 8.5 Pesticide residues

The products covered by the provisions of this standard shall conform to those maximum limits for pesticide residue limits established by the Codex Alimentarius Commission for these products in codex Stan 193;

## 7 Environment

Black tea shall be produced, processed and handled under conditions complying with the stipulations of the Environmental Management and Co-ordination Act (EMCA), No.8 of 1999 of the Laws of Kenya, on environmental management and complying with cleaner production technological practices.

## 7 Packaging

7.1 The tea shall be packed in suitable, clean and dry containers, made of material, which does not change the tea quality (preserves tea quality)

7.2 The fill of the package shall comply with the Weights and Measures Act, Cap. 513 of the Laws of Kenya.

7.3 The disposal of used package and condemned black tea shall be carried out in compliance with the Environmental Management and Coordination Act (EMCA), Waste Regulations, 2006 of the Laws of Kenya on disposal of solid and liquid wastes.

## 11 Labelling

8.1 In addition to the provisions of the General Standard for the Labelling of Prepackaged Foods; KS EAS 38, the following specific provisions apply:

- i) product name as "Black Tea";
- ii) name, address and physical location of the manufacturer/ packer/ importer/ exporter;
- iii) date of manufacture;
- iv) expiry date;
- v) method of manufacturing;
- vi) the declaration "Food for Human Consumption";
- vii) storage instructions as "Store in a Cool Dry Place, Away from Contaminants and direct sunlight";
- viii) lot/batch/code number;
- ix) net weight in g or kg;
- x) instructions on disposal of used package; and
- xi) country of origin

8.2 A declaration of any inaccurate information in marking/labelling is prohibited and shall be punishable by law under the Standards Act, Cap. 496, of the Laws of Kenya.

## 11 Sampling

Sampling of black tea for analysis shall be carried out in compliance with KS ISO1839.