KENYA STANDARD

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ICS67.140.10

Orthodox tea — Specification

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Egerton University
Agriculture and Food Authority- Tea Directorate
Ministry of Health — Food Safety Unit
Government Chemist's Department
Melvin Mash International Ltd
Unilever Tea Kenya Ltd
Kenya Plant Health inspectorate Service
James Finlay (Kenya) Limited
Kenya Agricultural and Livestock organization -Tea Research Institute
Ministry of industry, Trade and cooperatives
Ministry of Agriculture, Livestock and Fisheries
Kenya Tea Development Agency Ltd
Institute of Packaging of Kenya
Consumer Information Network
Gold crown beverages-Kenya LTD
Karatina University
Kenya Bureau of Standards- Secretariat

REVISION OF KENYA STANDARDS

Inordertokeepabreastof progressinindustry,KenyaStandardsshallberegularlyreviewed. Suggestionsfor improvementstopublishedstandards, addressedtotheManagingDirector,KenyaBureau ofStandards,are welcome.

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Orthodox teas — Specification

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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 needto prepare this standard has arisen fromthe increased needto accommodatetechnologicalinnovations andthe desiretoposition theKenyatea ashigh qualityofferingin thetea world market. Thus,there isa 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 enhancedsafety of the consumers.
During the preparation of this standard, reference was made to thefollowing documents:

ISO 3720; Black tea — Definitions and basic requirements
KS ISO 11287;Green tea— Definitions and basic requirements

Acknowledgement is herebymade for theassistance derived from these sources

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Orthodox teas — Specification

1 Scope

This Kenya Standard specifies requirements and methods of sampling and test of orthodox teas(non-aerated, aerated, semi aerated and purple) of the species Camellia sinensis (Linneaus) O. Kuntze. This standard does not apply to flavoured teas and decaffeinated orthodoxteas

2 Normativereferences

Thefollowingreferenceddocumentsareindispensableforthe applicationof thisKenyaStandard.Fordated references, only the edition cited applies. For undatedreferences, the latest edition of the referenceddocument (including any amendments) 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 dryashing
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: Colonycount 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: Colonycount 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 substancescharacteristic of green and black tea – Part 2: Determination of catechins ingreen tea – Method using high performance liquid chromatography)

3 Definition and Terms

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

3.1 Orthodox tea

Tea derived from the tender leaves, buds, and shoots of varieties of the species *Camellia sinensis*(L.) O. Kuntze, known to be suitable for making tea for consumption as a beverage. Orthodox tea is derived from tea varieties and produced by acceptable processes including withering, enzyme inactivation, aeration, semi aeration and non-aeration.

3.2 Extraneous matter

Any material of tea origin such as twigs, barkand stems

3.3Foreign 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 safetyof black tea

3.5 Filth

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

3. Taint

Taste and odour foreign to tea

4 Requirements

4.1 Generalrequirements

Orthodox teasshall comply withthe following:

4.1.1 The tea shall be clean and reasonably free from extraneous matter when inspected visually.

4.1.2 The tea shall be free from taint, and shall have the characteristics, appearance, colour and taste of purple tea, when examined by sensory analysis.

4.1.3 The tea shall be free from any additives such as colouring agents and flavourings.

4.2 Chemical requirements

4.2.1 The tea shall comply with the requirements specified in Table 1 using the methods quoted, in which allthe figures given are expressed on the basis of material oven dried to constant mass at (103 ± 2) °C by themethod specified in ISO 1573.

4.2.2 If no limit is specified for the moisture content of the tea, the actual loss in mass at 103 °C of the sample may be determined and the result recorded in the test report. In such cases, the determination shall be carried out by the method described in ISO 1573.

4.2.3 Liquor for sensory assessment can be prepared by the method specified in ISO 3103. The assessment shall be described in the test report using terms defined in ISO 6078

4.2.4Compositionalqualityrequirements/limits

The orthodox teas shallcomplywith the requirements/limits specified in Table 1.

Table 1 — Chemical requirement for orthodox teas.

SL No.	Characteristic	Requirement					Methods of test
		aerated	Non aerated	Semi aerated	Purple Tea		
					Aerated	Non aerated	
(i)	Moisture content %, m/m, max.	7.0 max	7.0 max	7.0 max	7.0 ma	7.0 max	KS ISO 1573

					x		
(ii)	Water extract, percent (m/m) min.	32 min	32 min.	32 min	32 min.	32 min.	KS ISO 9768
(iii)	Total ash, percent (m/m)	4 min 8 max	8 max 4 min	4 min 8 max	8 max. 4 min.	8 max. 4 min.	KS ISO 1575
(iv)	Water soluble ash, as percentage of total ash, min.	45 min	45 min	45 min	45 min	45 min	KS ISO 1576
(v)	Alkalinity of water-soluble ash (as KOH), percent (m/m)	1.0[a]- 3.0[a]	1.0 min.[a] 3.0 max[a]	1.0 min.[a] 3.0 max[a]	1,0 min[a] 3,0 max[a]	1.0 min[a] 3.0 max[a]	KS ISO 1578
(vi)	Acid-insoluble ash, percent (m/m)	1.0 max	1.0 max.	1.0 max	1.0 max.	1.0 max.	KS ISO 1577
(vii)	Crude fibres, percent (m/m), max	16.5 max	16.5 max	16.5 max	16.5max	16.5 max	KS ISO 5498 or KS I
(viii)	Total polyphenols (m/m), min	9.0 min	7 min	10.5 min 26.0 max	19 min	22 min	KS ISO 14502-1
(ix)	Total Catechins content%, (m/m),min	7 min	11 min	2.5-16.0	3 min.	7 min.	KS ISO 14502-2
	Total monomeric anthocyaninns, mg/L	-	-0.5 min	-	14 min	75 min	

NOTE

[a] 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

[b] The specific method for the determination of crude fibre in tea is specified in ISO 15598, however for the purpose of routine estimation, t dispute, the method of determination should always be that specified in ISO 15598. The requirement of 16.5 % mass fraction remains unc

Preparation of tea liquor for sensory analysis

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

5. CONTAMINANTS

5.1 Orthodox teas shall comply with maximum levels of the Codex General standard for contaminants and toxins in Food and feed (CODEX STAN 193-1995)

5.2 Pesticides

Orthodox teas shall comply with maximum residue limits for pesticides established by the Codex Alimentarius Commission in the Codex General standard for contaminants and toxins in Food and feed (CODEX STAN 193-1995)

5. Heavy Metals

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

Table2—Heavymetalcontaminantlimitsin Orthodoxteas

SL No.	Parameter	Limit	Test method
i)	Arsenic (As),ppm, max.	0.1	AOAC 999.10
iv)	Cadmium (Cd), ppm, max.	0.1	AOAC 942.17

	Lead (Pb), ppm Max	0.1	AOAC 942.17

Figures in table above set as minimum default subject to endorsement by CODEX Alimentarius Commission

5. Iron Fillings

Iron fillings, if present, shall comply with the limits specified in Table 3.

Table3—Iron fillingslimitsin Orthodoxteas

SL No.	Parameter	Limit	Test method
1.	Iron filings,ppmmax.	50	KS 2160

6. HYGIENE

6.1 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.

6. 2 Orthodox teasshallcomplywithmicrobiologicalrequirementsin Table

Table4—Microbiological limits for Orthodoxteas

SL No	Type of micro-organism	Limits	Test method
(i)	Yeasts cfu/ g, max	10^3	KS ISO 21527-2
	Mouldscfu/ g, max	10^4	KS ISO 21527-1
(ii)	*Staphylococcus aureus*cfu/ g, max	Absent	KS ISO 6888-1
(iii)	*E. Coli*, cfu/ g, max	Absent	KS ISO 7251
(iv)	*Salmonella* spp, cfu/ 25 g, max	Absent	KS ISO 6579

7 Environment

Orthodox teas shallbeproduced,processedandhandledunderconditionscomplyingwiththestipulationsofthe EnvironmentalManagementand Co-ordinationAct(EMCA), No.8 of1999ofthe LawsofKenya,on environmental managementand complying with cleaner productiontechnologicalpractices.

8 Packaging

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

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

8.3 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.

9 Labelling

9.1 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 “orthodox 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

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

10 Sampling

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

ANNEX 1

GRADES IN ORTHODOX TEAS

	FP	**Flowery Pekoe**
Whole leaf	FTGFOP	Fine Tippy Golden Orange Pekoe
	TGFOP1	Tippy Golden Orange Pekoe
	GFOP	Golden Flowery Orange Pekoe
	FOP	Flowery Orange Pekoe
	OP	Orange Pekoe
Brokens	BOP	Broken Orange Pekoe one
	GFBOP	Golden Flowery Broken Orange Pekoe
	BPS	Broken Pekoe Souchong
	GBOP	Golden Broken Orange Pekoe
	FBOP	Flowery Broken Orange Pekoe
	BOP	Broken Orange Pekoe
Fannings	GOF	Golden Orange Fannings
	FOF	Flowery Orange Fannings
	BOPF	Broken Orange Pekoe Fannings
	OPD	Orange Pekoe Dust
	OCD	Orange Churamani Dust
	BOPD	Broken Orange Pekoe Dust
	BOPFD	Broken Orange Pekoe Fine Dust
Dust	FD	Fine Dust
	D – A	Dust – A
	Spl.Dust	Special Dust
		Golden Dust
	G. Dust	

KEBSCERTIFICATIONMARKS

1. ProductCertificationMarks

KEBSStandardizationMark(S-Mark)isissued foruseonproductsthatcomplywiththeminimum quality requirements prescribed in Kenya standards.Itusesstandardsasabenchmarkfor quality compliance and aims at givingmanufacturersimprovedmarketaccessand also givingconsumersanassuranceofqualityforthe productsbearingthemark.

StandardizationMark

SYMBOLFORPRODUCTQUALITY

ImportStandardizationMark

SYMBOLFORPRODUCTQUALITY

Diamond Mark of Quality

SYMBOLFORPRODUCTQUALITYEXCELLENCE

2. SystemsCertificationMarks

ISO9001REGISTEREDFIRM

QUALITYMANAGEMENTSYSTEM

OCCUPATIONALHEALTHANDSAFETY

OHSAS18001

ISO14001REGISTEREDFIRM

ENVIRONMENTALMANAGEMENTSYSTEM

ISO22000REGISTEREDFIRM

FOODSAFETYMANAGEMENTSYSTEM

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- Enforcementofstandards
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INFORMATIONONSTANDARDS

Standardsaredocumentsthatprovideacommonreferencepointfortheassessmentofthequalityofgoodsandservices.Standardsfacilitatetranparencyinthe exchangeofproductsandenhancemarketaccessofKenyanproductsintolocal, regionalandinternationalmarkets.

InformationonstandardsandrelateddocumentsisavailableattheKEBSstandardsinformationcentre.

KEBShousestheWTO-TBTNationalEnquiryPoint(NEP)whichdisseminates notificationlikelytoaffectinternationaltradetotheindustry.

KEBSalsoprovidestechnicaladviceoninstallationandimprovementofquality goodsandservicestotheindustrysoastofacilitateefficientimplementationof standards.Someoftheadvantagesofstandardsinclude:enhancementofquality assurance,safetyandenvironmentalprotectionmeasures,minimizationofwastage,reductionofcostsandunecessaryvarietiesandpromotionofinterchangeabilityandincreasedproductivityinindustry.