

हरी चाय — विशिष्टि
(पहला पुनरीक्षण)

Green Tea — Specification
(First Revision)

ICS 67.140.10

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Stimulant Foods Sectional Committee had been approved by the Food and Agriculture Division Council.

Tea is a popular beverage consumed all over the world. It is an important commodity in the international trade and India is one of the major tea producing and exporting countries in the world. The objective of this standard is to specify the plant source from which green tea is to be manufactured and to set requirements for certain chemical characteristics which, if met, are an indication that the green tea has been subjected to recognized good production practices. To save time and expenses, the quality of green tea is also assessed by tea taster, who from his experience can assess whether a given green tea would comply with the chemical requirements or not.

Earlier requirements of both black tea and green tea were covered in IS 3633 : 1972. IS 3633 was revised in 2003 and the provisions of green tea were deleted, for which a separate standard IS 15344 : 2003 'Green tea — Specification' was formulated, in line with the ISO practice. This first revision of IS 15344 has been brought out to align the product specifications with the *Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011* and *Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011*. Major changes include:

- a) Labelling requirements have been updated;
- b) Limits of heavy metals have been updated;
- c) For determination of total catechins, IS 17804 (Part 2) : 2022/ISO 14502-2 : 2005 has been referred in place of the method earlier given in Annex A;
- d) For use of permitted flavours and processing aids, *FSSAI Regulations* have been referred; and
- e) For limits of pesticides and contaminants, *FSSAI Regulations* have been referred.

In the preparation of this standard, due consideration has been given to the *Food Safety and Standards Act, 2006* and *Regulations* framed thereunder and *Legal Metrology Act, 2009* and *Rules* framed thereunder. This standard is, however, subject to the restrictions imposed under these, wherever applicable.

The composition of the Committee responsible for formulation of the standard is given in [Annex B](#).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
GREEN TEA — SPECIFICATION
(First Revision)

1 SCOPE

This standard prescribes the requirements, methods of test and sampling for green tea.

2 REFERENCES

The standards listed in [Annex A](#) contain provisions, which through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

3 TERMINOLOGY

For the purpose of this standard, the following definition shall apply.

3.1 Green Tea — Green tea means the tea derived solely and exclusively and produced by acceptable processes, notably enzyme inactivation, rolling or comminution and drying, from the leaves, buds and tender stems of varieties of the species *Camellia sinensis* (Linnaeus) O. Kuntze, known to be suitable for making green tea for consumption as a beverage.

4 REQUIREMENTS**4.1 Description**

The green tea shall produce a liquor of characteristic flavour, colour and taste. The green tea shall have no taint and shall be free from extraneous matter, added colours and non-permitted flavours. Green tea shall be evaluated in accordance with the procedure prescribed in Annex A of IS 3633.

4.2 Packaged green tea may contain natural flavours and natural flavouring substances.

NOTE — Natural flavours and natural flavouring substances are flavour preparations and single substance respectively, acceptable for human consumption, obtained exclusively by physical processes from materials of plants origin either in their natural state or after processing for human consumption in packaged tea only.

4.3 Green tea may contain permitted processing aids

within the limits as specified under the *Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011*.

4.4 Chemical Requirements

Green tea shall also comply with the requirements specified in [Table 1](#), in which all the requirements are expressed on the basis of the material oven-dried at $103\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ by the method described in IS 13852.

4.5 Heavy metals, if any, in green tea shall not exceed the limits specified in [Table 2](#).

4.6 The pesticide residues and other contaminants, if any, in green tea shall not exceed the limits as prescribed in the *Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011*.

4.7 Hygiene Requirements

Green tea shall be manufactured and packed under hygienic conditions as per IS 2491.

4.8 Additional Requirements for ECO-Mark**4.8.1 General Requirements**

4.8.1.1 The product shall conform to the requirements prescribed under [4](#).

4.8.1.2 The manufacturers shall produce to BIS environmental consent clearance from the concerned State Pollution Control Board as per the provisions of the *Water (Prevention and Control of Pollution) Act, 1974*; the *Air (Prevention and Control of Pollution) Act, 1981*; and the *Water (Prevention and Control of Pollution) Cess Act, 1977* along with the authorization, if required under the *Environment (Protection) Act, 1986*, while applying for ECO-Mark.

4.8.2 Specific Requirements

4.8.2.1 The product shall be free from adulterants like spent leaves, grit, sand, leaves of other plants. The product shall also be free from off odour. It shall have its characteristic flavour. It shall be free from mould growth.

4.8.2.2 No extraneous flavour shall be added, however, for exports this may be allowed as per the provisions of the *Food Safety and Standards Act, 2006* and the Rules and Regulations framed thereunder.

4.8.2.3 The iron filings in the product shall not exceed the limit of 200 mg/kg, and their size shall not be greater than 2.0 mm when tested by the method given in Annex C of IS 3633.

Table 1 Requirements for Green Tea

(Clause 4.4)

SI No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Water extract, percent by mass, <i>Min</i>	32.0	IS 13862
ii)	Total ash, percent by mass	4.0 to 8.0	IS 13854
iii)	Water-soluble ash, of total ash, percent by mass, <i>Min</i>	45	IS 13855
iv)	Alkalinity of water-soluble ash (as KOH), percent by mass	1.0 to 3.0	IS 13856
v)	Acid-insoluble ash, percent by mass, <i>Max</i>	1.0	IS 13857
vi)	Crude fibre, percent by mass, <i>Max</i>	16.5	IS 16041
vii)	Total catechins, percent by mass, <i>Min</i>	9.0	IS 17804 (Part 2)

NOTE — No limit is specified for the moisture content of the green tea. If desired, the actual loss in mass at 103 °C ± 2 °C of the sample as received 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 IS 13853.

Table 2 Limits of Heavy Metals in Green Tea

(Clause 4.5)

SI No.	Metal Contaminant	Limit (mg/kg), <i>Max</i>	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Lead	5	IS 12074 or AOAC 2015.01*
ii)	Copper	150	IS 11123
iii)	Arsenic	1.1	IS 11124 or AOAC 2015.01*
iv)	Tin	250	17 of IS 2860
v)	Cadmium	1.5	AOAC 2015.01
vi)	Mercury	1.0	IS 12041 or AOAC 2015.01*
vii)	Methyl mercury	0.25	See Note 2

NOTES

1 In case of dispute, the method indicated by "*" shall be the referee method.

2 Any validated international method may be used.

5 PACKING AND MARKING

5.1 Packing

5.1.1 Green tea shall be packed in closed, clean and dry containers made of material, which does not affect the green tea, or in accordance with the customary trade practices so as to allow the green tea to retain its freshness.

5.1.2 For ECO-Mark the product shall be packed in such packages, which are made from recyclable, reusable, or biodegradable materials, which shall be declared by the manufacturer and maybe accompanied with detailed instructions for proper use.

5.2 Marking

5.2.1 The information given in [5.2.1.1](#) or [5.2.1.2](#) shall be clearly and indelibly marked on the package.

5.2.1.1 Retail package

- a) Name and address of the manufacturer or packer or importer;
- b) Name of the product;
- c) Net quantity of contents;
- d) List of ingredients;
- e) Month and year or date, month and year of manufacture/packaging;
- f) Expiry date (date, month and year to be indicated);
- g) Lot No. or batch code number or any other identification number;
- h) Storage conditions, if applicable;
- j) Tea board registration number if flavour is added;
- k) Declaration if flavors and flavouring substance added;
- m) Nutritional information (if the product is flavoured);
- n) Allergen declaration (may be required for flavoured products); and
- p) Any other, requirements given under the *Food Safety and Standards (Labelling and Display) Regulations, 2020* and the *Legal Metrology (Packaged Commodities) Rules, 2011*.

5.2.1.2 Wholesale package

Every packaged food meant for non-retail sale shall

provide the following mandatory information either on the container or pasted on the label thereto:

- a) Name and address of the manufacturer or packer or importer;
- b) Name of the product;
- c) Net quantity of contents;
- d) List of ingredients;
- e) Month and year of manufacture/packaging;
- f) Expiry date (date, month and year to be indicated);
- g) Lot No. or batch, code number or any other identification number;
- h) A statement 'NON-RETAIL CONTAINER';
- j) Declaration of total number of packages in terms of number and weight; and
- k) Any other requirement as stipulated under *Food Safety and Standards (Labelling and Display) Regulations, 2020* and the *Legal Metrology (Packaged Commodities) Rules, 2011*.

5.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

5.2.3 The product may also be marked with ECO-Mark. The following additional information shall also be marked on the label for ECO-Mark:

- a) List of identified critical ingredients in descending order of composition, percent by mass; and
- b) The criteria for which the product has been labelled as ECO-Mark.

6 SAMPLING

The ground sample of the material shall be prepared in accordance with the procedure outlined in IS 13852 before undertaking the analysis for various chemical characteristics. The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in IS 3611.

ANNEX A

(Clause 2)

LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 2491 : 2013	Food hygiene — General principles — Code of practice (<i>third revision</i>)	IS 13853 : 1994/ ISO 1573 : 1980	Tea — Determination of loss in mass at 103°C
IS 2860 : 1964	Methods of sampling and test for processed fruits and vegetables	IS 13854 : 1994/ ISO 1575 : 1987	Tea — Determination of total ash
IS 3611 : 2000/ ISO 1839 : 1980	Tea — Sampling (<i>second revision</i>)	IS 13855 : 1993/ ISO 1576 : 1988	Tea — Determination of water-soluble ash and water-insoluble ash
IS 3633 : 2003	Black tea — Specification (<i>second revision</i>)	IS 13856 : 1993/ ISO 1578 : 1975	Tea — Determination of alkalinity of water-soluble ash
IS 11123 : 1984	Method for determination of copper by atomic absorption spectrophotometry	IS 13857 : 1993/ ISO 1577 : 1987	Tea — Determination of acid-insoluble ash
IS 11124 : 1984	Method for atomic absorption spectrophotometric determination of arsenic	IS 13862 : 1999/ ISO 9768 : 1994	Tea — Determination of water extract (<i>first revision</i>)
IS 12041 : 1987	Method for the determination of mercury by atomic absorption spectrophotometer	IS 15642 (Part 1) : 2006	Quick methods of adulterants/ contaminants in common food products Part 1 Physical methods
IS 12074 : 1987	Method for determination of lead by atomic absorption spectrophotometer	IS 16041 : 2012/ ISO 15598 : 1999	Tea — Determination of crude fibre content
IS 13852 : 1994/ ISO 1572 : 1980	Tea — Preparation of ground sample of known dry matter content	IS 17804 (Part 2) : 2022/ISO 14502- 2 : 2005	Determination of substances characteristic of green and black tea: Part 2 Content of catechins in green tea — Method using high-performance liquid chromatography

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ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Stimulant Foods Sectional Committee, FAD 06

<i>Organization</i>	<i>Representative(s)</i>
Tea Board India, Kolkata	SHRI S. SOUNDARARAJAN (<i>Chairperson</i>)
Coffee Board, Bengaluru	DR MANDAPPA I. M. DR TILUTOMA MUDOI (<i>Alternate</i>)
Confederation of Indian Food Trade and Industry, New Delhi	MS RANJEET KAUR MS VARSHA YADAV (<i>Alternate</i>)
Consumer Research, Education, Action, Training and Empowerment, Paramakudi	DR P. DURAISINGAM SHRI K. SURESH KANNA (<i>Alternate</i>)
CSIR - Central Food Technological Research Institute, Mysuru	DR PUSHPA S. MURTHY DR DEVENDRA J. HEWARE (<i>Alternate</i>)
Directorate of Cashewnut and Cocoa Development, Kochi	DR FEMINA SHRI DADASAHEB DESAYI (<i>Alternate</i>)
Hindustan Unilever Limited, Mumbai	DR SANGEETA CHADHA MS NEHA TYAGI (<i>Alternate</i>)
Indian Tea Association, Kolkata	SHRI ARIJIT RAHA SHRI SUJIT PATRA (<i>Alternate</i>)
National Tea Research Foundation, Kolkata	DR AMRIT CHANDRA BARBORA
Nestle India Limited, Gurugram	MS SHREYA PANDEY MS DICKSHA MATHUR (<i>Alternate</i>)
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Tea Association of India, Kolkata	SHRI PRABIR KUMAR BHATTACHARJEE SHRI GITOPAM HAZARIKA (<i>Alternate</i>)
Tea Board India, Kolkata	DR MAHIPAL SINGH DR ANIRBAN BASU MAJUMDER (<i>Alternate</i>)
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UPASI Tea Research Foundation, Coimbatore	DR R. VICTOR J. ILANGO DR P. BOOPHATHIRAJ (<i>Alternate</i>)
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Member Secretary
DR BHAWANA
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