IS 6364 (1993): Spices and Condiments - Tamarind Pulp [FAD 9: Spices and Condiments]

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IS 6364 : 1993
(Reaffirmed - 2012)

भारतीय मानक

मसाले एवं मसाले – इमली गूदा – विशिष्टि

(दूसरा पुनरीक्षण)

Indian Standard

SPICES AND CONDIMENTS — TAMARIND PULP — SPECIFICATION

(Second Revision)

UDC 664·5 : 634·461

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

October 1993

Price Group 2

FOREWORD

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

Tamarind pulp is commonly used as a spice and condiments. Pulp is made from mature fruits of *Tamarindus indica*, commonly known as tamarind or *IMLI*, by removing first the rind and then the fibrous skeleton enclosing the pulp and the seed. The pulp is then sun-dried and compressed into cakes.

This standard was originally published in 1971 and revised in 1979. In this revision, the Spices and Condiments Sectional Committee has taken into consideration the latest technological developments in the field and incorporated additional requirements of total tartaric acid and total reducing sugars.

This standard is also subject to the restrictions imposed under the *Prevention of Food Adulteration Act, 1954* and the *Rules* framed thereunder, wherever applicable.

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 : 1960 'Rules for rounding off numerical values (*revised*)'. 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

SPICES AND CONDIMENTS — TAMARIND PULP — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for tamarind pulp, obtained from the mature fruits of *Tamarindus indica.*

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
1797 : 1985	Methods of test for spices and condiments (*second revision*)
4941 : 1974	Extracted honey (*first revision*)
5955 : 1993	Spices and condiments — Tamarind concentrate — Specification
13145 : 1993	Spices and condiments — Methods of sampling (*first revision*)

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definitions shall apply.

3.1.1 *Extraneous Matter*

It includes inorganic foreign matter, such as sand, earth and dust; and organic foreign matter, such as leaf, stem, fibre, rind or any other vegetable matter (including tamarind seed).

4 REQUIREMENTS

4.1 General

The tamarind pulp shall be obtained from the mature fruits of *Tamarindus indica,* by removing first the rind, then the fibrous skeleton enclosing the pulp and the seeds. The pulp shall be well dried and compressed into cakes. The colour of the cakes shall be uniform. The pulp shall have the characteristic taste and flavour, and shall be free from any obnoxious odour.

NOTE — If demanded by the overseas purchaser, molasses or jaggery or sodium chloride may be added during procesing. Such addition(s) should be declared with the percentage(s).

4.2 Freedom from Moulds Insects, etc

Tamarind pulp shall be free from visible insects and moulds, and shall be practically free from dead insects and contamination by rodents, visible to the naked eye, corrected if necessary in any particular case. In case the magnification exceeds X 10, this fact should be stated in the test report.

4.3 The requirements for tamarind pulp shall be as given in Table 1.

5 PACKING

5.1 The material shall be packed in any of the containers described below:

a) Polyethylene bags;

b) Closely woven bamboo baskets, preferably lined with polyethylene or palmyra mat;

c) Sound jute bags, preferably lined with polyethylene; and

d) Wooden boxes lined with palmyra mats.

5.2 The containers shall be sound, clean, dry and free from insect infestation or fungal contamination and shall not impart any undesirable smell.

6 MARKING

Each container shall be marked or labelled with the following particulars:

a) Name of the material and grade designation,

b) Variety or trade name;

c) Batch or code number;

d) Net mass; and

e) Date of packing.

7 SAMPLING

7.1 The method of drawing representative samples of the material and criteria for conformity shall be drawn according to Annex C.

8 TESTS

8.1 Seedless tamarind pulp shall be tested according to **4** and **5** of Table 1.

Table 1 Requirements for Tamarind Pulp
(*Clause* 4.3)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Annex of This Standard	Other Indian Standards
(1)	(2)	(3)	(4)	(5)
i)	Moisture, percent by mass, *Max*	20	A	—
ii)	Tamarind seed content, percent by mass, *Max*	3	B	—
iii)	Extraneous matter, percent by mass, *Max*	1·0	—	Cl 5 of IS 1797 : 1985
iv)	Acid insoluble ash, (on dry basis) percent by mass, *Max* (*see* Note)	0·50	—	Cl 9 of IS 1797 : 1985
v)	Total tartaric acid	9	—	Annex D of IS 5955 : 1993
vi)	Total reducing sugar, percent by mass, *Min*	35	—	Annex C of IS 4941 : 1974

NOTE — For estimation of acid insoluble ash the material shall be completely free from seeds.

ANNEX A

[*Table* 1, *Item* (i)]

DETERMINATION OF MOISTURE

A-1 GENERAL

A-1.0 Either of the two methods, toluene distillation or drying in vacuum oven may be followed. Toluene distillation method (*see* IS 1797 : 1985) shall be a referee method for settling disputes, whereas vacuum oven drying may be adopted as a routine method.

A-2 VACUUM OVEN DRYING METHOD

A-2.1 Apparatus

A-2.1.1 *Flat-bottom Dish*

Of nickel or other suitable material not affected by boiling water, 7 to 8 cm in diameter and not more than 2·5 cm deep, provided with a short glass stirring rod having a widening flat end.

A-2.1.2 *Sand*

Which passes through 500-micron IS Sieve and is retained on 180-micron IS Sieve. It shall be prepared by digestion with concentrated hydrochloric acid, followed by thorough washing with water till free from chlorides. It shall then be dried and ignited to dull red heat.

A-2.1.3 *Vacuum Oven*

A-2.2 Procedure

A-2.2.1 Heat the dish containing about 20 g of the prepared sand and a stirring rod in the oven for about one hour. Allow to cool in an efficient desiccator for 30 to 40 minutes. Weigh accurately about 2 g of the material into the tared dish. Add about 5 ml of distilled water in the dish and thoroughly mix the sand with the sample by stirring with the glass rod, smoothing out lumps and spreading the mixture over the bottom of the dish.

A-2.2.1.1 Place the dish on a boiling water-bath for 30 minutes, then wipe the bottom of the dish and transfer it to the vacuum oven maintained at a temperature between 60 and 70°C and at a pressure of not more than 6·7 kPa (50 mm of mercury).

A-2.2.1.2 After 2 hours, remove the dish to a desiccator, allow to cool and weigh. Replace the dish in the oven for a further period of one hour, remove to the desiccator, cool and weigh again. Repeat the process of heating, cooling and weighing after every one hour till consecutive weighings do not differ by more than 0·5 mg.

A-2.3 Calculation

A-2.3.1 Moisture, percent by mass $= \frac{100\ (M_1 - M_2)}{M_1 - M}$

where

M_1 = mass, in g, of the contents of the dish before drying;

M_2 = mass, in g, of the contents of the dish after drying; and

M = mass, in g, of the empty dish with the sand and the glass rod.

ANNEX B

[*Table* 1, *Item* (ii)]

DETERMINATION OF SEED CONTENT

B-1 Thoroughly mix the sample and weigh 500 g of the sample. Separate seeds, preferably by a knife and forceps. After separation of seeds, free them of any adhering pulp. Weigh the seeds and report the percentage.

ANNEX C

(*Clause* 7.1)

SAMPLING AND CRITERIA FOR CONFORMITY

C-1 GENERAL REQUIREMENTS OF SAMPLING

C-1.1 In drawing, preparing, storing and handling samples, care should be taken that the properties of the material being sampled are not affected.

C-1.2 The sample shall be placed in suitable containers on which the material has no action.

C-1.3 Each sample container shall be sealed air-tight with a stopper or a suitable closure after filling in such a way that it is not possible to open and reseal it without detection and marked with full details of sampling, the date of sampling, the name and address of the person drawing the sample, name of the material, the grade, the variety and the year of production.

C-2 SCALE OF SAMPLING

C-2.1 Lot

All the containers in a single consignment of material pertaining to the same variety, year of production and grade, shall constitute a lot. If consignment is declared or known to consist of different varieties, grade and produce of different years, the containers belonging to the same variety, grade and year of production shall be grouped together and each such group shall constitute a separate lot.

C-2.1.1 Each lot shall be tested for ascertaining the conformity of the material to the requirements of this specification.

C-2.2 The number (n) of containers to be selected from the lot in a stationary stock shall depend on the size of the lot and shall be in accordance with col 1 and 2 of Table 2.

Table 2 Number of Containers to be Selected for Sampling

(*Clause* C-2.2)

Lot Size			No. of Containers to be Sampled
(1)			(2)
2	to	50	2
51	to	150	5
151	to	300	8
301	to	500	10
501	to	800	13
801 and above			20

C-2.3 These containers shall, as far as possible, be selected at random from the lot and in order to ensure the randomness of selection, a random number table as agreed to between the purchaser and the vendor shall be used. In case, such a table is not available, the following procedure shall be adopted:

Starting from any container, count them 1, 2, 3.....up to r and so on. Every rth container thus counted, provided it is stacked in a place which is accessible and convenient for handling the container with ordinary labour, shall be withdrawn from the lot to give a sample for test where $r = N/n$, N being the total number of containers in the lot and n the number of containers to be selected (*see* Table 2). In case r comes out to be a fractional number, its value shall be taken to be as equal to the integral part of it.

C-2.4 When the containers are in transit, sample containers may be drawn at the time of loading or unloading of the containers. For this purpose the number of containers to be selected shall also be in accordance with

Table 2. The value of *r* shall be calculated as in **C-2.3** and every *r*th container while in motion, shall be removed for getting a test sample.

C-3 TEST SAMPLES AND REFEREE SAMPLES

C-3.1 Preparation of Test Samples

The containers selected according to **C-2.2** shall be completely emptied and the contents mixed thoroughly by suitable means. Sub-samples shall be taken from different sides and various depths (top, middle and bottom) with clean hands so as to yield a total of about 2 kg of sample. The sample so drawn shall again be mixed thoroughly and minced. From this composite sample, a final sample, of 1 kg shall be taken and further divided into three equal parts. Each part thus obtained shall constitute a test sample. The test sample shall be transferred immediately to thoroughly clean and dry containers and sealed air-tight. They shall be labelled with the necessary particulars (*see* **5.3**).

C-3.2 Test Samples for Purchaser and Vendor

One of the test sample (*see* **C-3.1**) shall be for the purchaser and another for the vendor.

C-3.3 Referee Sample

The third test sample (*see* **C-3.1**) bearing the seals of the purchaser and the vendor or their representatives when they are present at the time of sampling or of the person, who sampled the lot, shall be the referee sample. It shall be used in case of a dispute between the purchaser and the vendor and shall be kept at a place agreed to between the purchaser and the vendor.

C-4 CRITERIA FOR CONFORMITY

C-4.1 The test sample shall be tested for the various characteristics of this specification.

C-4.2 A lot shall be declared as conforming to this specification when each of the test result of the test samples satisfies the corresponding requirement of this specification.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Revision of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards Monthly Additions'. Comments on this Indian Standard may be sent to BIS giving the following reference:

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices :	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	331 01 31 331 13 75
Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola, CALCUTTA 700054	37 84 99, 37 85 61 37 86 26, 37 86 62
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	53 38 43, 53 16 40 53 23 84
Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113	235 02 16, 235 04 42 235 15 19, 235 23 15
Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	632 92 95, 632 78 58 632 78, 91, 632 78 92

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TO
IS 6364 : 1993 SPICES AND CONDIMENTS — TAMARIND PULP — SPECIFICATION

(Second Revision)

[*Page* 2, *Table* 1, *Sl No.* (v), *col* 2] — Substitute the following for the existing:

'Total tartaric acid, percent, *Min.*'

(FAD 9)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 NOVEMBER 1994
TO
IS 6364 : 1993 SPICES AND CONDIMENTS — TAMARIND PULP — SPECIFICATION

(Second Revision)

(*Page* 1, *clause* **2**) — Delete 'IS 13145 : 1993 Spices and condiments — Methods of sampling (*first revision*)'.

[*Page* 2, *Table* 1, *Sl No.* (iii), *col* 5] — Substitute 'Cl 4' *for* 'Cl 5'.

[*Page* 2, *Table* 1, *Sl No.* (iv), *col* 5] — Substitute 'Cl 8' *for* 'Cl 9'.

(FAD 9)

Reprography Unit, BIS, New Delhi, India