REVIEW ANALYSIS OF INDIAN STANDARD

1. **Sectional Committee No. & Title** : **FAD 16 (Foodgrains, Allied products, and other agricultural produce)**

2. **IS No** : **IS 4684:1975**

3. **Title** : **Specification for edible groundnut flour (Expeller Pressed)**

4. **Date of review** : **31.8.2021**

5. Review Analysis

i) Status of standard(s), if any from which assistance had been drawn in the formulation of this IS.

Standard (No. & Title)	Whether the standard has since been revised	Major changes	Action proposed
NIL			

ii) Status of standards referred in the IS

Referred standards (No. & Title)	IS No. of this standards since revised	Changes that are of affecting the standard under review	Action proposed
IS 7874 : Part 1 : 1975 - Methods of tests for animal feeds and feeding stuffs: Part 1 general methods	IS 7874 : Part 1 : 1975 - Methods of tests for animal feeds and feeding stuffs: Part 1 general methods	NIL	NIL
IS 1714 : 1960- Methods of sampling and test for oilcakes as livestock feed	Withdrawn	NIL as Amendment 1 was issued replacing this standard with IS 7874 : Part 1 : 1975	NIL
IS 1712 : 1982- Specification for cottonseed oilcake as livestock feed ingredient (Second Revision)	Withdrawn	NIL as Amendment 1 was issued replacing this standard with IS 7874 : Part 1 : 1975	
IS 1875 : 1975 ---Specification for edible groundnut flour (solvent extracted) (first revision)	The standard has been superseded by IS 4875:1975- Specification for edible groundnut flour (Solvent Extracted) (First Revision)	NIL	NIL
IS 460 :1962- Specifications for test sieves	IS 460 : Part 1 : 2020-Test Sieves — Specification Part 1 Wire Cloth Test Sieves (Fourth Revision)	To Switch over to ISO sieve sizes as specified in IS 460 : Part 1 : 2020	To replace with IS 460 : Part 1 : 2020
IS 2491-1972-Code for hygienic conditions for food processing units (first revision)	IS 2491 : 2013-Food hygiene - General principles - Code of practice (Third Revision)	The standard has been updated and aligned with the latest revision of International Code of Practice — General Principles of Food Hygiene [CAC/RCP 1-1969, Rev.4- 2003].	To replace with IS 2491 : 2013

IS 5402:1969- Method for standard plate count of bacteria in foodstuffs.	IS 5402 : Part 1 : 2021- Microbiology of the food chain - Horizontal method for the enumeration of microorganisms- Part 1: Colony count at 30 C by the pour plate technique	The standard has been aligned with the international standard- ISO 4833-1:2013	To replace with IS 5402 : Part 1 : 2021
IS 5401:1969 Methods for detection and estimation of coliform bacteria in foodstuffs.	IS 5401 : Part 1 : 2012- Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of coliforms: Part 1 colony count technique (Second Revision)	The standard has been aligned with the international standard- ISO 4832:2006	To replace with IS 5401 : Part 1 : 2012
IS 5887 :1970- Method. for detection of bacteria responsible for food poisoning and food-borne diseases.	IS 5887 : Part 3 : 1999- Methods for detection of bacteria responsible for food poisoning: Part 3 general guidance on methods for the detection of salmonella (Second Revision)	The standard has been aligned with the international standard – ISO 6579:1993	To replace with IS 5887 : Part 3 : 1999
IS 5315 : 1969- Methods of sampling for milled cereals and pulses products.	With drawn	International sampling methods may be followed	Recommended sampling methods are given in IS0 950 (for grains) and IS0 2170 (for milled products).
IS 265 : 1962- HYDROCHLORIC ACID SPECIFICATION Fifth Revision	IS 265:2021 HYDROCHLORIC ACID SPECIFICATION Fifth Revision	Food grade has been introduced	To replace with IS 265:2021

iii) Any other standards available related to the subject & scope of the standard being reviewed (International/regional/other national/association/consortia, etc. or of new or revision of existing Indian Standard)

Standard (No. & Title)	Provisions that could be relevant while reviewing the IS	Action proposed
Code of practice for control of aflatoxin in groundnut: Part 2 plant storage and processing flour and oil as per IS 9071 : Part 2:1979 shall be implemented at the premises.	Storage conditions of groundnut specified for control of aflatoxin will help the manufacturer.	May be included.
IS 4427 Grading of groundnut kernals for oil milling and table use	This standard is with drawn . But this standard would help the manufacturers in selection of kernals for processing to have better control on aflatoxin issues.	Grading parameters may be included to assess conformity of raw materials to manufacture a quality product.
Codex standard for grading of peanut kernals intended for processing of direct human consumption	Codex norms are available for grading to select kernals for further processing	Grading parameters may be included to assess conformity of raw materials to manufacture a quality product.
FSSAI STANDARD	ISS specifies that colouring and flavouring agents shall not be added. Permitting usage of food additives enables unique creative ways of using this product in bakery and confectionery products Though groundnut is a agricultural product ISS do not specify the maximum residual level of agrochemicals and heavy metals. Lead, arsenic limits for groundnut is specified in Fssai standards. Epoxyconazole and other insecticides/pesticide residue	Only those food additives permitted under the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 may be incorporated Complying with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011 may be incorporated.

	limits are available in FSSAI standards for groundnut	
AGMARK	Limits for Moisture level said in IS 4684:1975 is slightly more than agmark norms	Moisture limits may be relooked to align requirements for various local standards for ease of manufacturers to comply.
RWANDA STANDARD **DRS 417: 2019** **Peanut flour - Specification**	Free fatty acid content in % calculated as per ISO 729, Oilseeds—Determination of acidity of oils is specified in Rwanda standard whereas IS 4684:1975 says requirements based on subjective analysis only.	May be incorporated as it technically sounds best to express rancidity in objectively in terms of free fatty acid content
	Moisture level said in IS 4684:1975 is (9 % by Wt Max whereas Rwanda standard says (5% by Wt Max)	Moisture limits may be relooked as higher moisture level plays a main role in aflatoxin contamination.
	Limits for Ecoli , which is a pathogen tested as per RS 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-bromo4-chloro-3-indolyl beta-D-glucuronid) is specified in Rwanda standard	As the product is for edible purpose, check on pathogens is essential. May be included.

	Limits for yeast and mould tested as RS ISO 21527-2, 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 is specified in Rwanda standard	May be included to upgrade our ISS on par with regional standards.
	The max limits of TPC is almost 5 times more in ISS,	May be relooked as our ISS seems less stringent hurdling export opportunities
	ISS do not specify limit for aflatoxin B –the most toxic form. Total aflatoxin limit of 10 (µg/kg) max and Aflatoxin B1 limit of 5 (µg/kg) max	The total aflatoxin content Limit and inclusion of aflatoxin B limits to be fixed opening up scope for export as aflatoxin is one prime reason for failure of India in groundnut export.
	ISS has not addressed the maximum residual level of agrochemicals and heavy metals. Rwanda standard says maximum residual level to comply with limits established by Codex Alimentarius commission	May be included, as this aspect being a barrier for export
	ISS specifies that the material shall be' packed in polyethylene or polyethylene-lined jute bags, or in clean tinplate containers and norms for no. of stitches in case of handstitching/machine stitching., whereas Rwanda standards says Peanut	Packing and sealing in any find of package safeguarding the qualities of the product conforming food grade materials only may be incorporated.

	flour shall be packaged in food grade materials that will safeguard hygienic, nutritional, technological and organoleptic qualities of the product. Each package shall be securely closed and sealed. This gives more scope to manufacturers to pack as per customer requirements. Rwanda standard addresses expiry date, storage instructions and country of manufacture in marking requirements whereas ISS do not address the above. Being an edible product, it is essential to specify shelf life and also as the product has the risk of aflatoxin contamination, storage instructions are also necessary to be specified. Mentioning name of country will aid export scope.	Declaration of shelf life, storage instructions and country of manufacture may be incorporated in marking requirements.
UGANDA STANDARD **DUS 2123 :2019** **Full fat groundnut flour — Specification**	Free fatty acid content in % calculated as per US ISO 659, Oilseeds—Determination of acidity of oils is specified in Uganda standard whereas IS 4684:1975 says requirements based on subjective analysis only. Moisture level said in IS 4684:1975 is (9 % by Wt Max whereas Rwanda standard says (8% by Wt Max)	May be incorporated as it technically sounds best to express rancidity in objectively in terms of free fatty acid content Moisture limits may be relooked as higher moisture level plays a main role in aflatoxin contamination.

	Limits for Ecoli and Staphylococcus aureaus, which are pathogen tested as per International test method is specified in Uganda standard	As the product is for edible purpose, check on pathogens is essential. May be included.
	Limits for yeast and mould tested as US ISO 21527-2, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeratin of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95 is specified in Uganda standard	May be included to upgrade our ISS on par with regional standards.
	The max limits of TPC mentioned in Uganda Standard is almost 5 times more in ISS,	May be relooked as our ISS seems less stringent hurdling export opportunities
	ISS do not specify limit for aflatoxin B –the most toxic form. Total aflatoxin limit of 10 (µg/kg) max and Aflatoxin B1 limit of 5 (µg/kg) max is specified in Uganda Standard.	The total aflatoxin content Limit and inclusion of aflatoxin B limits to be fixed opening up scope for export as aflatoxin is one prime reason for failure of India in groundnut export.
	ISS has not addressed the maximum residual level of agrochemicals and heavy metals. Uganda standard says maximum residual level to comply with limits established by Codex Alimentarius commission	May be included, as this aspect being a barrier for export

	ISS specifies that the material shall be' packed in polyethylene or polyethylene-lined jute bags, or in clean tinplate containers and norms for no. of stitches in case of handstitching/machine stitching., whereas Uganda standards says to be packed in food grade containers which will safeguard the hygienic, nutritional, and organoleptic qualities of the product	Packing and sealing in any find of package safeguarding the qualities of the product conforming food grade materials only may be incorporated.
	Uganda standard addresses expiry date, storage instructions and country of manufacture, list of additive used in marking requirements whereas ISS do not address the above. Being an edible product, it is essential to specify shelf life and also as the product has the risk of aflatoxin contamination, storage instructions are also necessary to be specified. Mentioning name of country will aid export scope.	Declaration of shelf life, storage instructions and country of manufacture may be incorporated in marking requirements. In case of addition of food additives, list of additives used to be marked on label

iv) Technical comments on the standard received, if any

Source	**Clause of IS 4684**	**Comment**	**Action proposed**
UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 2.2	Free fatty acids are indicative of rancidity. Instead of subjectively saying "shall be free from rancid odour", it can be technically better expressed in terms of free fatty acid content in %	Inclusion of the requirement - Free fatty acid content and limits for the same may be incorporated.
AGMARK NORMS FOR GROUNDNUT CAKE UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 2.5., Table 1 (1)	The limits of moisture said in ISS is slightly more than Agmark norms and some available Regional standards.	Limits to be relooked as moisture is an important factor for aflatoxin contamination
AGMARK GRADING NORMS FOR GREOUNDNUT KERNELS CODEX ALIMENTARIUS NORMS FOR GRADING OF PEANUT KERNALS UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 2.1	Conformity to raw material as per some specific norms is not given. Selection of good raw material ie) groundnut kernel is an important factor to control aflatoxin contamination	Norms for grading of groundnut kernals may be given to aid manufacturers

UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 2.3	ISS specifies particle size limits. But there are many ways of getting creative with this unique ingredient including adding it to sauces and soups for texture and flavor, using it as a crumb topping for chicken and seafood, and even blending it into smoothies and shakes to increase the flavor and protein content etc…Particle size norms restricts the application of the product in industries.	Unless otherwise specified, the material shall be of such fineness that mutually accepted by the customer may be included Or Scope for course flour may be included
UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 3.1	ISS specifies packing in polyethylene or polyethylene-lined jute bags, or in clean tinplate containers. Norms for manner of no. of stitches is specified for bag machine- or hand-stitched. If hand stitched, the mouth shall be rolled over and stitched. Stitches shall be in two cross-rows with at least 14 stitches in each row.	Manufacturer may be given the liberty to choose his packing material as agreed with his customer with the condition that the packing material shall be food grade only and safeguard the qualities of the product.
UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 3.2	ISS do not specify shelf life, storage conditions, country of manufacture. Being a edible product, shelf life declaration is essential. Also storage condition is one of the major factor influencing risk of aflatoxin contamination. As scope of export is more for India being one of leading groundnut cultivator, country of manufacture may be marked.	Shelf life declaration, storage instructions, country of manufacture, list of additives added if permitted may be incorporated.

UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	Clause 2.2 & Table 2 (1)	Requirements for inclusion of pathogens – Ecoli & staphylococcus may be included as pathogen check is essential for edible product manufactured from agricultural produce. Being a seasonal crop. the groundnut kernels are stored in factory for quite some time before processing. Hence risk of yeast and mould contamination is possible leading to toxic aflatoxin contamination. Hence yeast and mould check is also essential.	Requirements may be added and limits may be fixed
UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019 FOOD PRODUCTS STANDARDS AND FOOD ADDITIVES) REGULATIONS, 2011	Clause 2.2	Food additives like flavoring and coloring agents are not permitted as per ISS whereas FSSAI does. Other available regional standards also permit.	May be permitted to enable unique creative ways of using this product in bakery and confectionery products

v) Information available on technical developments that have taken place (on product/processes/practices/use or application/testing/input materials, etc)

Source	Development	Relevant clause of the IS under review that is likely to be impacted (Clause & IS No.)	Action proposed
IS 16287:2015 Foodstuffs - Determination of aflatoxin B1 , and the total content of aflatoxins B1 , B2 , G1 and G2 in cereals, nuts and derived product UGANDA STANDARD DUS 2123 :2019 RWANDA STANDARD DRS 417: 2019	High Performance Liquid chromatographic method is available as WHO has recommended to use HPLC system-based tests and it does not require the use of toxic solvents such as chloroform and dichloromethane. Also it has high precision, high sensitivity, and high automation High performance liquid chromatographic method' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Test Methods for Food Products Sectional Committee and approval of the Food and Agriculture Division Council. The method has been validated for maize containing 24,5 µg/kg, for peanut butter containing 8,4 µg/kg, and for raw peanuts containing 16 µg/kg of total aflatoxins. It has also been shown that this method can be used for oilseed products, dried fruits and derived products.	APPENDIX J of IS 4684 and [Table 1, Item (viii)]	IS 16287:2015 to be included as a alternate method along with TLC test method said in ISS

vi) Issues arising out of changes in any related IS or due to formulation of new Indian Standard

Related IS and its Title (revised or new)	Provision in the IS under review that would be impacted & the clause no. or addition of new clause/provision	Changes that may be necessary in the Standards under review	Action proposed
NIL			

vii) Any consequential changes to be considered in other IS

Related IS to get impacted		Requirements to be impacted
IS 1656 : 2007	Milk - Cereal based complementary foods - Specification (Fourth Revision)	NIL
IS 11536 : 2007	Processed - Cereal based complementary foods - Specification (Second Revision)	
IS 15757 : 2007	Follow-up formula - Complementary foods - Specification	
IS 1011 : 2002	Biscuits - Specification (Fourth Revision)	
IS 9037 : 1979	Specification for peanut butter	
IS 10038 : 1981	Specification for textured plant protein foods prepared by extrusion cooking	
IS 1011 : 2002	Biscuits (bi-lingual)	
IS 12566 : 1989	Ready-to-eat extruded snacks - Specification	

IS 12895 : 1990	Alga spirulina, food grade - Specification	
IS 13264 : 1991	Ready khichdi mix - Specification	
IS 13265 : 1991	Ready vegetable pulav mix specification	
IS 13266 : 1991	Instant curried dal mix - Specification	
IS 13267 : 1991	Ready suji - Halwa mix - Specification	
IS 13354 : 1992	Ready upma mix - Specification	
IS 3137 : 1974	Specification for high-protein mixes for use as food supplements (First Revision)	
IS 4875 : 1975	Specification for edible groundnut flour (Solvent Extracted) (First Revision)	
IS 7463 : 2004	Wheat flour for use in bakery industry - Specification (Second Revision)	
IS 7835 : 2013	Edible medium - Fat soya flour - Specification (First Revision)	
IS 7837 : 2013	Edible full - Fat soya flour - Specification (First Revision)	
IS 7021 : 2017	Protein - Rich food supplements for infants and pre - School children - Specification (First Revision)	
IS 7482 : 1989	Protein - Based beverages - Specification (First Revision)	
IS 7487 : 1986	Specification for protein - Enriched biscuits (First Revision)	
IS 7592 : 1989	Peanut chikki (Candy) - Specification (First Revision)	
IS 8211 : 1976	Specification for edible soya protein isolate	
IS 8212 : 1976	Specification for edible groundnut protein isolate	
IS 8220 : 1976	Specification for protein - Rich concentrated nutrient supplementary foods	
IS 8222 : 1976	Specification for edible leaf protein concentrate	

IS 9629 : 2004	Maize atta, maize maida and maize suji - Specification (First Revision)	
IS 10901 : 1984	Specification for paushtik wheat atta	
IS 10902 : 1984	Specification for paushtik wheat maida	
IS 10903 : 1984	Specification for paushtik barley powder	
IS 13046 : 1991	Sweet potato flour - Specification	
IS 9038 : 1979	Specification for reconstitutable protein beverage food	
IS 9487 : 1980	Specification for `Ready-to-eat' Protein-rich Extruded Foods	
IS 9488 : 1980	Specification for edible coconut protein concentrates	
IS 9605 : 1992	Alpha - Amylase, food grade - Specification (First Revision)	
IS 14299 : 1995	Neem extract concentrate containing azadirachtin - Specification	
IS 7187 : 1989	Ice cream cones - Specification (First Revision)	
IS 9071 : Part 2 : 1979	Code of practice for control of aflatoxin in groundnut: Part 2 plant storage and processing flour and oil	
IS 8678 : 1977	Specification for vegetable protein - Based yoghurt (Vegetable Curds)	
IS 14433 : 2007	Infant milk substitutes - Specification (First Revision)	
IS 17068 : 2019	Guidelines for formulated supplementary foods for older infants and young children	

6. Any other observation:

The revision will essentially take care of the following also:

a) Publication of standard in A4 size and as per latest format.
b) Introduction of Hindi title on the first cover page.
c) Introduction of ICS No. in place of UDC No. on first cover page.
d) Copyright details and name/address of the institution and other details as per the latest practice.
e) Style of Foreword to be as per the latest practice, indicating all previous versions, and introducing a Para on the current revision.
f) Use of latest style, manner and wordings, etc., such as 'Annex' for 'Appendix'.
g) Corrections of editorial/ typographical mistakes in the existing standards and incorporation of all the issued amendments.
h) Removal of informatory list of standards at the end, if any.
i) Updation of back cover page with mention of new document number, current details of information shared therein including BIS offices.

7. Recommendations:

In view of above, it is proposed that IS 4684:1975 may be taken up for revision , on scrutiny of the review points by the committee , keeping in view the technological advancements in the sector and the current manufacturing practices followed by industry. Committee may discuss the review points please

M. ARUL SATHYA
SC D, CTBO