



# **BUREAU OF INDIAN STANDARDS - Indian Standards on Cattle Feed & Feed Ingredients**

*Mrs. Suneeti Toteja  
Head (Food and Agriculture Department)  
Bureau of Indian Standards*

# Bureau of Indian Standards

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*Erstwhile known as **Indian Standards Institution (ISI)**, Bureau of Indian Standards was established in was set up on 6 Jan, 1947 with the objective of promoting standardization, quality control and simplification in industry & commerce*

**BIS Act  
1986**

**Bureau of Indian Standards (BIS)**  
Act 1986 gave **statutory status** to BIS  
on 1 April 1987

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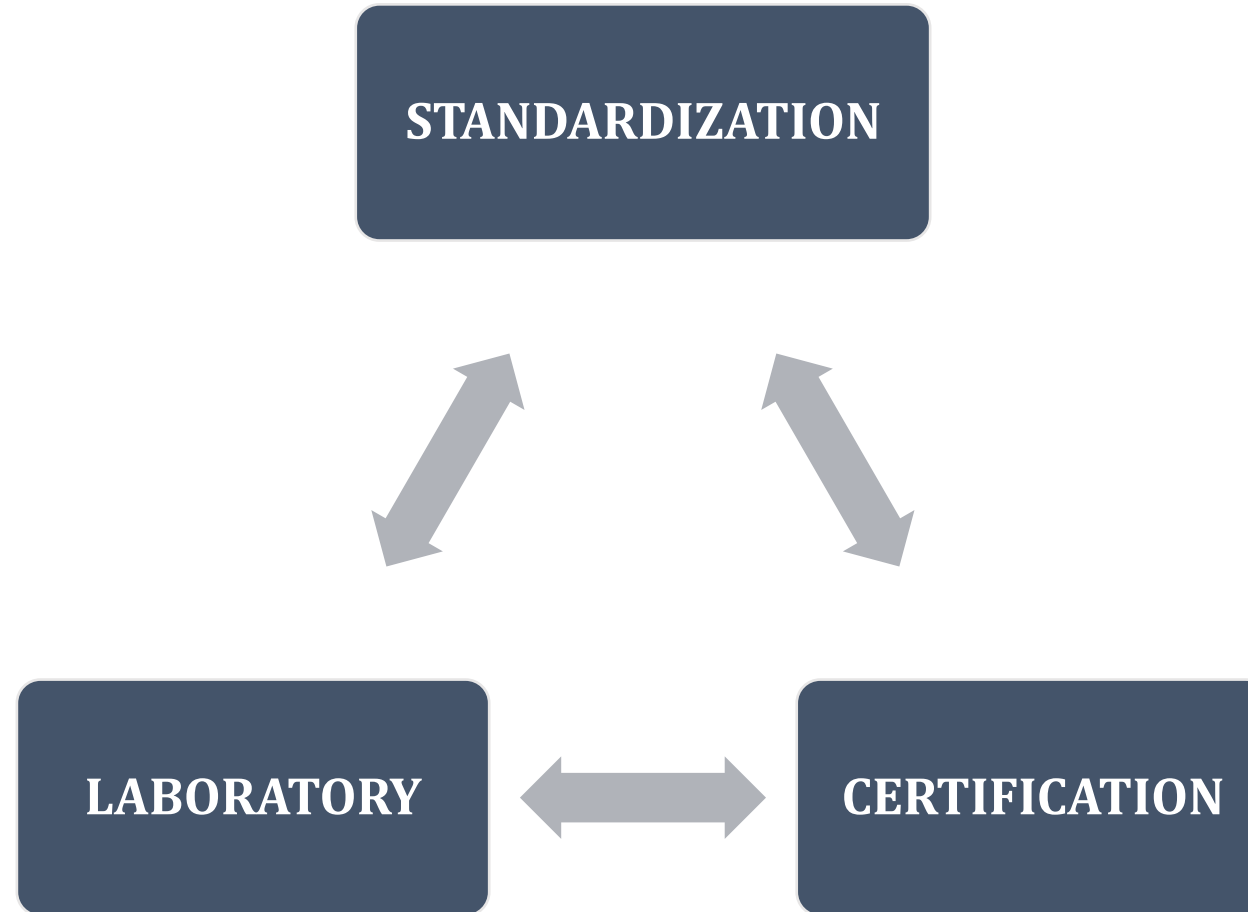
**BIS Act  
2016**

The **BIS Act 2016** enforced on 12<sup>th</sup>  
October 2017 gave BIS the status of  
**National Standards Body**

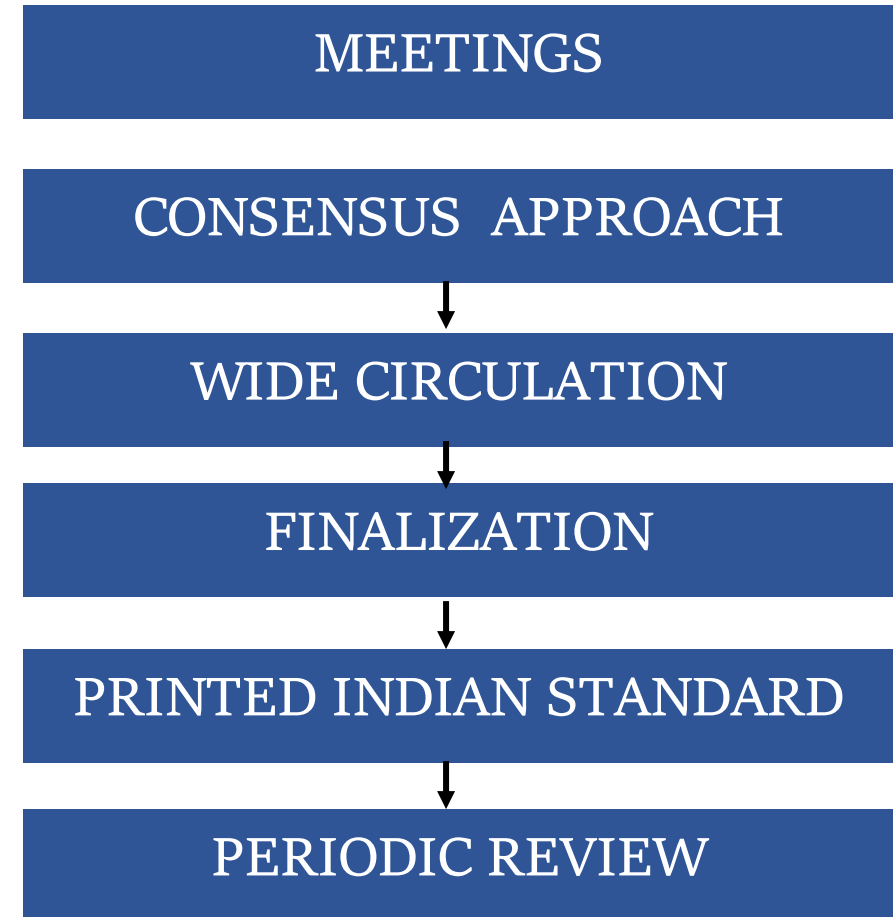
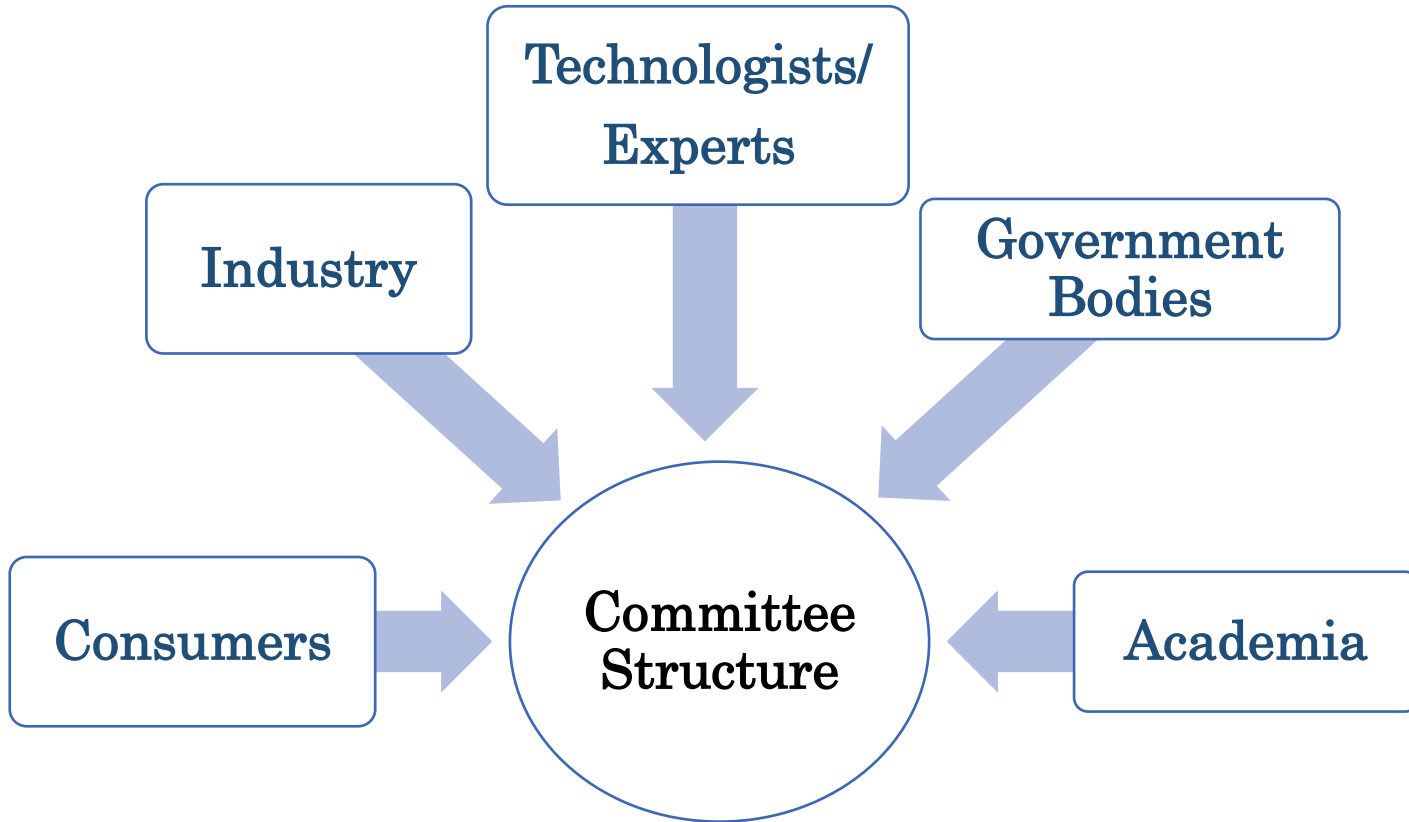
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# CORE ACTIVITIES OF BIS

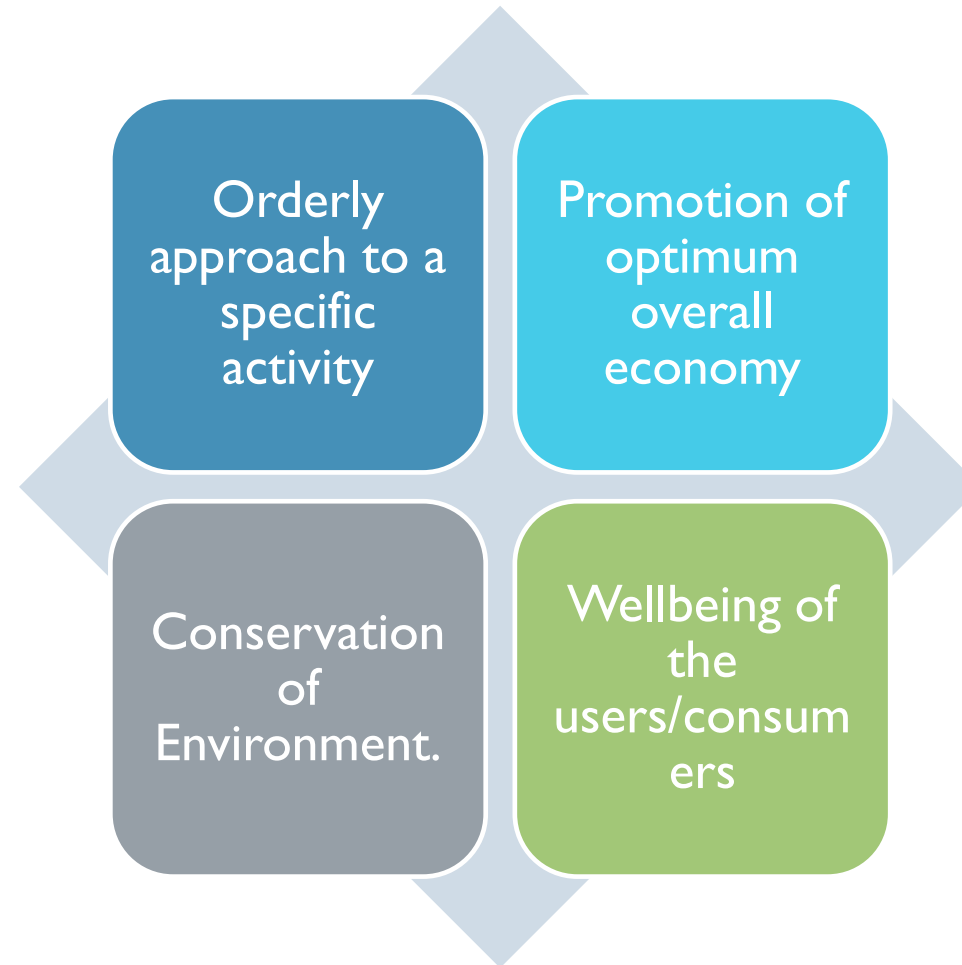
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# Standards Formulation Process



# STANDARDS & ITS SIGNIFICANCE



*....and many more*

# PRINCIPLES OF STANDARDIZATION

## 1. Transparency

- Easy accessibility of information, work programs
- Adequate time & opportunity for all interested to participate & comment.

## 2. Openness

- Participation in standards development open to all.
- Procedures publicly available.

## 3. Impartiality & Consensus

- No bias against or in favour of any specific stakeholder.
- Decision making through consensus.

*ISO/IEC Guide 59: 2019 – ISO and IEC recommended practices for standardization by national bodies*

# PRINCIPLES OF STANDARDIZATION (CONTINUED)

## 4. Effectiveness & Relevance

- Due consideration of latest technological developments.
- Periodic review.

## 5. Coherence

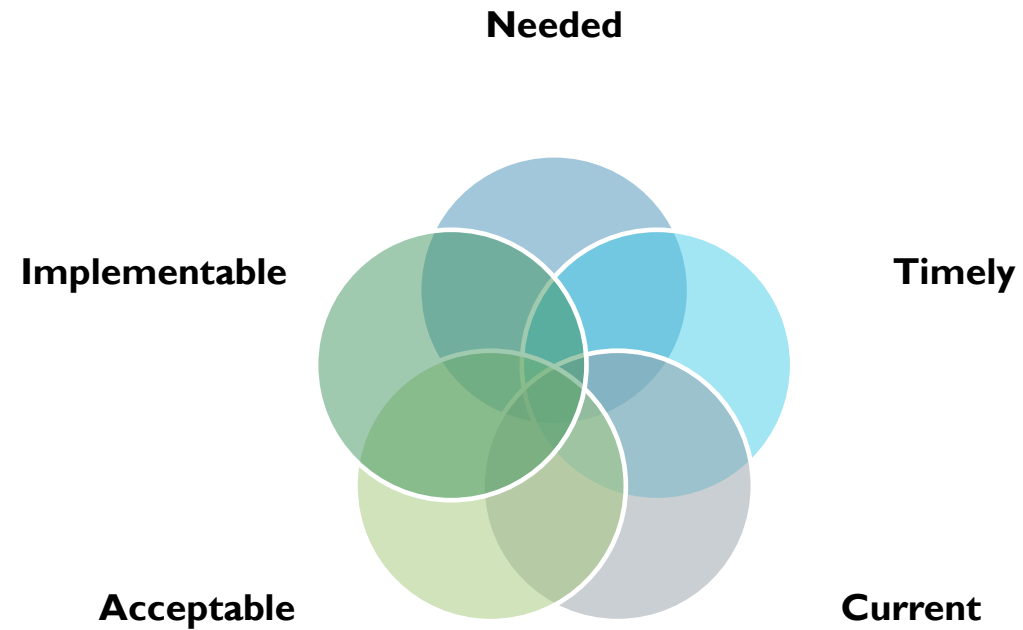
- Avoiding duplication, overlap and contradictions.
- Coordination between NSB & SDOs : Harmonious Standards Development

## 6. Development Dimension

- Engaging potentially underrepresented interested parties.
- Improving accessibility of information.

***ISO/IEC Guide 59: 2019 – ISO and IEC recommended practices for standardization by national bodies***

# A STANDARD MUST BE...





# Animal Feeds and Nutrition Sectional Committee

## FAD 5

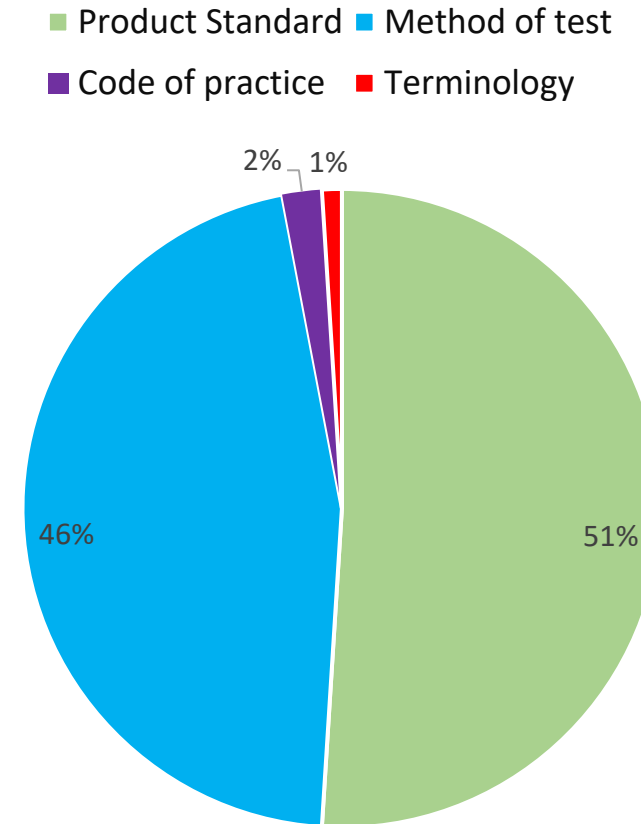


**Chairperson: Dr. R.K. Singh, Former Director, ICAR-IVRI, Izzatnagar, Bareilly**

**Scope :** Standardization in the field of:

- A) Animal feedstuffs, mineral mixtures, compounded feeds and feed supplements
- B) Physical, chemical and microbiological methods of analysis.

**Liaison :** ISO TC-34 SC-10 (P): Animal Feeding Stuffs



# Indian Standards on Compounded Cattle Feeds

Compound cattle feed is a mixture of various concentrate feed ingredients in suitable proportion which provides a balanced source of protein, energy, minerals and vitamins to the cattle

## IS 2052 : 2023 Compounded Feeds for Cattle – Specification

**Type I**  
(high yielding animals)

**Type II**  
(low to medium yielding animals)



## IS 5560 : 1970 Specification for Compounded Feeds for Young Stock

**Calf Starter Meal ( CSM )**  
(8 weeks to 26 weeks)

**Calf Growth Meal ( CGM )**  
(26 weeks to 108 weeks)



# Important requirements in Indian Standards on Compounded Cattle Feeds IS 2052

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- The feed shall be free from harmful constituents, metallic pieces and adulterants.
- The feed shall also be free from fungal growth and insect infestation, and from fermented, musty, rancid or any other objectionable odour
- Ingredients which may be used for feed formulation
- Limits for quality characteristics such as moisture, crude protein, crude fat, crude fiber, acid insoluble ash, aflatoxin B1, etc
- Marking/ labelling requirement to declare various nutritional parameters such as Calcium and Phosphorus .



# IS 2052 : 2023 Compounded feeds for cattle



Sl. No.	Characteristic	Requirement	
		Type I	Type II
i)	Moisture, percent by mass, Max	11	11
ii)	Crude protein (N × 6.25), percent by mass, Min	22	20
iii)	Crude fat, percent by mass, Min	4.0	3.0
iv)	Crude fibre, percent by mass, Max	10	12
v)	Acid insoluble ash, percent by mass, Max	2.5	3.0
vi)	Salt (as NaCl based on Na or Cl), percent by mass, Max	1.0	1.0
vii)	Calcium (as Ca), percent by mass, Min	0.8	0.8
viii)	Total phosphorus, percent by mass, Min	0.5	0.5
ix)	Available phosphorus, percent by mass, Min	0.25	0.25
x)	Urea, percent by mass, Max	1.0	1.0
xi)	Vitamin A, IU/kg, Min	7 000	7 000
xii)	Vitamin D <sub>3</sub> , IU/kg, Min	1 200	1 200
xiii)	Vitamin E, IU/kg, Min	30	30
xiv)	Aflatoxin B <sub>1</sub> , ppb, Max	20	20
xv)	Cadmium, mg/kg, Max	0.5	0.5

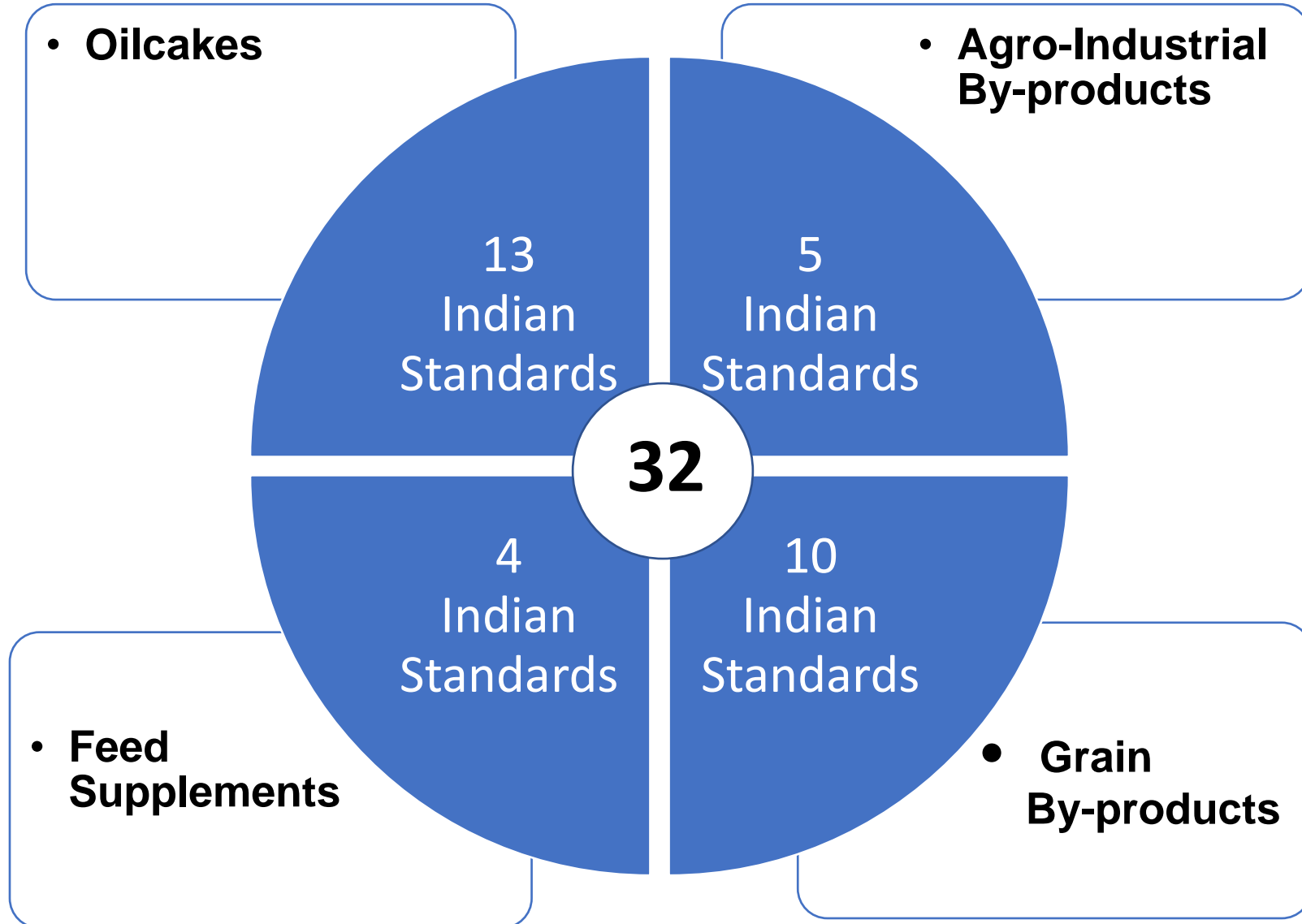
# Ingredients for Compounded Cattle Feeds



## LIST OF INGREDIENTS

- 01 Grains and Seeds** (Barley, Gram, Maize, Guar, Bajra etc.)
- 02 Grain By-products** (Tur Chuni, Rice Bran, Wheat Bran etc.)
- 03 Oilcakes and Meals** (Coconut oilcake, Cottonseed oilcake etc. )
- 04 Tuber and Roots, Greens** (Tapioca, Berseem meal etc.)
- 05 Industrial By-products** (Mango seed kernel, Molasses, Urea etc.)
- 06 Feed Supplements** (Common Salt, DCP, Mineral Mixture etc)

# Indian Standards on Feed Ingredients



# Oilcakes as Feed Ingredients

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- Oil-cake is the residue obtained after the greater part of the oil has been extracted from an oilseed.
- Oil-cakes are rich in protein and most are valuable food for farm animals
- According to the method of processing, the cakes are classified into
  - a) *Ghani pressed*
  - b) *Expeller pressed and*
  - c) *Solvent extracted*

# Oilcakes as Feed Ingredients

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**IS 1712 : 2022** *Cottonseed oilcake as livestock feed ingredient — Specification (third revision)*

**IS 1713 : 2022** *Decorticated groundnut oilcake as livestock feed ingredient — Specification (third revision)*

**IS 1932 : 2022** *Mustard and rapeseed oilcake as livestock feed ingredient — Specification (third revision)*

**IS 1934 : 2016** *Sesamum oilcake as livestock feed ingredient – Specification (second revision)*

**IS 1935 : 2022** *Linseed oilcake as livestock feed ingredient — Specification (second revision)*

**IS 2151 : 2022** *Maize germ oilcake as livestock feed ingredient — Specification (second revision)*

**IS 2154 : 2014** *Coconut oilcake as livestock feed ingredient – Specification (third revision)*





# Oilcakes as Feed Ingredients



**IS 3440 : 1985** *Specification for solvent extracted linseed oilcake meal as livestock feed ingredient (first revision)*

**IS 3441 : 2022** *Solvent extracted groundnut oil cake as livestock feed ingredient —Specification (second revision)*

**IS 3592 : 1985** *Specification for solvent extracted decorticated cottonseed oilcake Meal as livestock feed ingredient (second revision)*

**IS 5862 : 2022** *Solvent extracted nigerseed oilcake (meal) as livestock feed — Specification (first revision)*

**IS 6242 : 1985** *Specification for solvent extracted undecorticated safflower oilcake as livestock feed ingredient (first revision)*

**IS 14702 : 2022** *Solvent extracted undecorticated sunflower oilcake as livestock feed ingredient — Specification (second revision)*



# Grain By-products as Feed Ingredients



**IS 2152 : 2013** *Maize gluten as livestock feed ingredient – Specification (second revision)*

**IS 4193 : 2022** *Guar meal as livestock feed ingredient — Specification (second revision)*

**IS 3160:2022** *Tur chuni as livestock feed ingredient — Specification (first revision)*

**IS 3161 : 2022** *Gram chuni as livestock feed ingredient — Specification (first revision)*

**IS 2153 : 2022** *Maize bran as livestock feed ingredient — Specification (second revision)*

**IS 2239:2022** *Wheat bran as livestock feed ingredient — Specification (second revision)*

**IS 3593:2022** *Solvent Extracted Rice Bran (De-Oiled Rice Bran) as Livestock Feed Ingredient — Specification (third revision)*

**IS 3163 : 2022** *Gram Chuni as Livestock Feed Ingredient — Specification (first revision)*



# Feed Supplements

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To meet animal nutritional demands, additional supplementation is often required. Feed supplements provide deficient minerals and nutrients when fed along with local feed resources.

**IS 920 : 1972** *Specification for common salt and cattle licks for animal consumption (first revision)*

**IS 1664 : 2002** *Mineral mixtures for supplementing cattle feeds — Specification (first revision)*

**IS 5470 : 2002** *Dicalcium phosphate, animal feed grade — Specification (first revision)*

**IS 10672 : 1983** *Specification for mineral mixtures for supplementing sheep and goat feeds*

# Agro-Industrial By-products as Feed Ingredients

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**IS 11586 : 2022** *Malt sprouts as livestock feed ingredient — Specification (first revision )*

**IS 12829 : 1989** *Mango seed kernel (Solvent Extracted) as livestock feed ingredient — Specification*

**IS 10741 : 1983** *Specification for ambadi (Hibiscus Cannabinus) cake as livestock feed ingredient*

**IS 13451 : 1992** *Urea molasses block as ruminant feed supplement —Specification*

**IS 14275 : 1995** *Technical requirements for urea molasses liquid drought feed for cattle*



# Common Requirements in Cattle Feed Ingredients

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## Physical requirements

- It shall be free from rancidity, adulterants, castor cake, husk, mahua cake, insect or visible fungus infestation and from fermented, musty or other objectionable odour.
- It shall also be free from extraneous matter and metallic pieces.

# Common Requirements in Cattle feed ingredients

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- Requirements for Crude Protein, Crude Fibre, Crude Fat , Acid Insoluble Ash are specified.
- Moisture content shall not be more than the specified limit
- Any material of animal origin except milk and milk products shall not be used as ingredient for manufacturing the product.

## Aflatoxin B<sub>1</sub>

- Aflatoxin B<sub>1</sub> content shall not be more than 20 ppb, except for solvent extracted rice bran as livestock feed (see IS 3593), rice polish (see IS 3163) and whole grains; wherein aflatoxin B<sub>1</sub> shall not be more than 50 ppb.

# Packing and Marking

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**Packing:** The material shall be packed in clean and sound plain or polyethylene lined jute or laminated paper bags or HDPE or polypropylene bags. The mouth of each bag shall be machine stitched.

**Marking :** Each bag shall be legibly and indelibly marked with the following information:

- Name and type of the material;
- Name and address of the manufacturer;
- Batch or code number;
- Net mass in kg;
- Date of packing; and
- Any other requirements as given under the *Legal Metrology (Packaged Commodities) Rules, 2011*.

# BIS Certification Marking

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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.



# Conformity Assessment Scheme of BIS

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- BIS Conformity Assessment Schemes are operated through a network of [41 Branch Offices](#) across the country and [5 Regional Offices](#) overseeing the work of the Branch Offices
- Although the Scheme is voluntary in nature, the Government of India on various considerations like public interest, protection of human, animal or plant health, safety of the environment, prevention of unfair trade practices, national security etc. has notified various products for compulsory compliance to Indian Standards through [Quality Control Orders \(QCOs\)](#)
- IS 2052 : 2009 Compounded Feeds for Cattle – Specification has been brought under mandatory BIS certification through the direction dated 27<sup>th</sup> Jan 2020 issued by FSSAI

# Fish, Fisheries and Aquaculture Sectional Committee, FAD 12



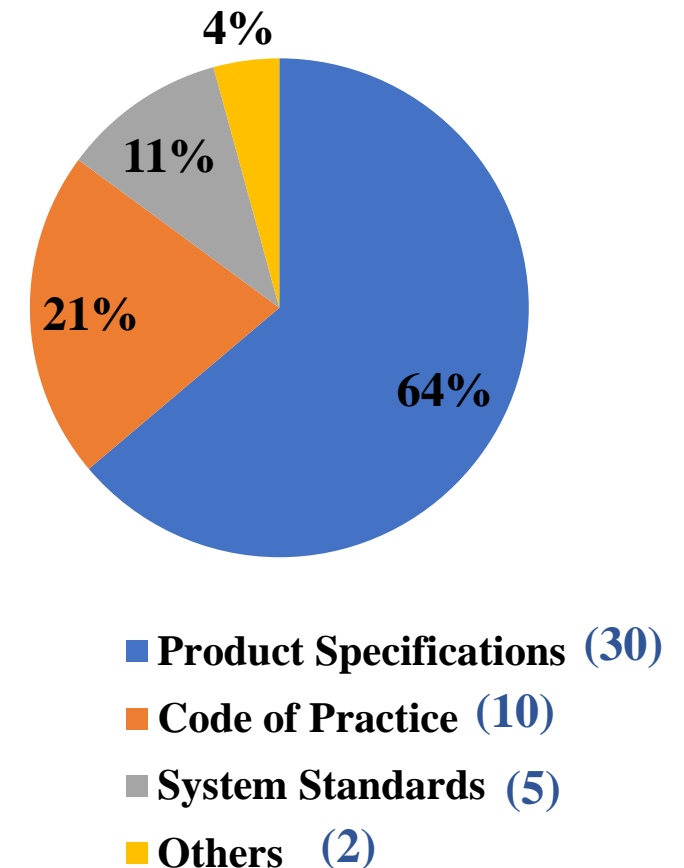
**Chairperson: Dr. J. K. Jena, DDG (Fisheries), ICAR**

**Scope :** Standardization in the field of:

- a)** Fresh and processed fish, fisheries and aquaculture products including fish feed and feed ingredients not covered by FAD 5
- b)** Fisheries and Aquaculture, including, but not limited to, terminology, technical specifications for equipment and for their operation, characterization of aquaculture sites and maintenance of appropriate physical, chemical, and biological conditions, environmental monitoring, data reporting, traceability and waste disposal,
- c)** Physical, chemical, microbiological and organoleptic methods of test pertaining to this committee

**Liaison : ISO TC-234 (P): *Fisheries and aquaculture***

**Distribution of Indian Standards  
Under FAD 12**



# Indian Standards on Fish Feed



IS No.	IS TITLE
IS 16150 (Part 1) : 2023	Fish Feed — Specification Part 1 Carp Feed (first revision)
IS 16150 (Part 2) : 2014	Fish Feed — Specification Part 2 Catfish feed (under revision)
IS 16150 (Part 3) : 2023	Fish Feed — Specification Part 3 Marine Shrimp feed (first revision)
IS 16150 (Part 4) : 2014	Fish Feed — Specification Part 4 Freshwater Prawn feed (under revision)
IS 16150 (Part 5) : 2023	Fish feed - Specification, Part 5 Pangasius feed

भारतीय मानक  
Indian Standard

IS 16150 (Part 1) : 2023

मत्स्य आहार — विशिष्टि

भाग 1 कार्प आहार

(पहला पुनरीक्षण)

Fish Feed — Specification

Part 1 Carp Feed

(First Revision)

ICS 67.120.30

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भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS  
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI - 110002

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February 2023

Price Group 7

# Indian Standards under publication

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- IS 16150 (Part 6) : 2023 Fish Feed — Specification, Part 6 Marine Carnivorous Fish Feed
- IS 16150 (Part 7) : 2023 Fish Feed — Specification, Part 7 Tilapia Fish Feed

# Important Requirements in Fish Feed Standards



- Prescribes the requirements and the methods of sampling and test for species. Provides a detailed list of ingredients allowed to be used for production of feed.
- Provides description, types, safety & nutritional requirements as per species and stage of development (spawn, fry, grow out, brood), physical and chemical characteristics etc.
- Quality parameters such as moisture, crude protein, crude fat, crude fiber, gross energy, PUFA etc.
- Methods of sampling and test, packaging and marking requirements.

IS 16150 (Part 1) : 2023

Table 1 Requirements for Carp Feed  
(Clauses 4.3 and 7.1)

Sl No.	Characteristic	Requirements						Method of Test, Ref to
		CLF (3)	CNF (4)	CSF (5)	CGF (6)	CFF (7)	CBF (8)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Moisture, percent by mass, <i>Max</i>	12	12	12	12	12	12	IS/ISO 6496* or 4 of IS 7874 (Part 1)
ii)	Crude Protein (N × 6.25), percent by mass, <i>Min</i>	35	35	26	22	20	25	IS/ISO 5983 : Part 1* or IS/ISO 5983 : Part 2 or 5 of IS 7874 (Part 1)
iii)	Crude fat, percent by mass, <i>Min</i>	6	6	4	4	3	6	IS/ISO 6492 or 7 of IS 7874 (Part 1)*
iv)	Crude fibre, percent by mass, <i>Max</i>	6	6	8	8	10	8	IS/ISO 6865 #
v)	Acid insoluble ash, percent by mass, <i>Max</i>	2.5	3	3	3	3	3	IS 14826 or 10 of IS 7874 (Part 1)*
vi)	Gross energy, kcal/kg <i>Min</i>	3 400	3 400	3 000	2 800	2 700	2 900	Annex D

# Animal Husbandry and Equipment Sectional Committee

## FAD 32

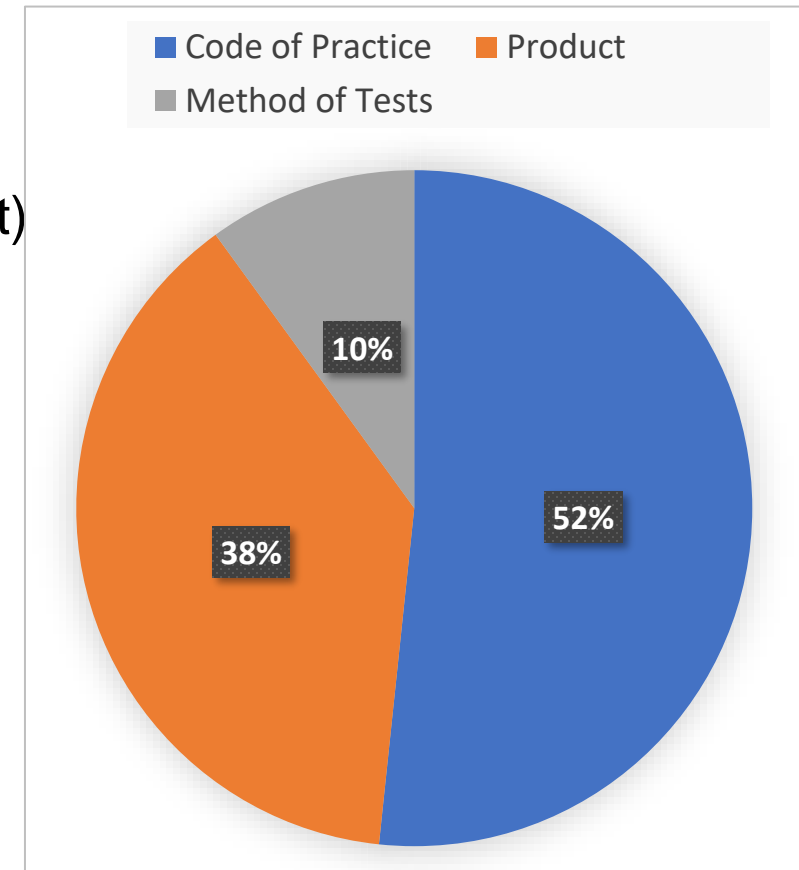


**Chairperson: Dr. B.N. Tripathi, Vice Chancellor, Sher-e-Kashmir University of Animal Science and Technology, Jammu**

**Scope :** Standardization in the field of:

- Animal husbandry (management practices, welfare and transport) for livestock, poultry, pet and laboratory animals
- Equipment for livestock, poultry, pet and laboratory animals.
- Code for breeding, housing and transport of the laboratory and other animals

**Liaison :** ISO TC-191 (O): *Animal (Mammals) Traps*



# Important Standards under FAD 32



**IS 14904 : 2007** *Transport of livestock — Code of practice (first revision)*

**IS 6027 : 1970** *Recommendations for farm cattle housing for large dairy farms*

**IS 11799 : 2005** *Recommendations for cattle housing in rural areas (first revision)*

**IS 5236 : 2022** *Transport of pigs by rail and road — Code of practice (second revision)*

**IS 5238 : 2001** *Transport of poultry — Code of practice (second revision)*

**IS 5309 : 2001** *Poultry farming equipment — Brooders — Specification (second revision)*

**IS 6228 : 1971** *Specification for poultry egg fertility tester*

**IS 6545 : 1972** *Specification for leg band for poultry*

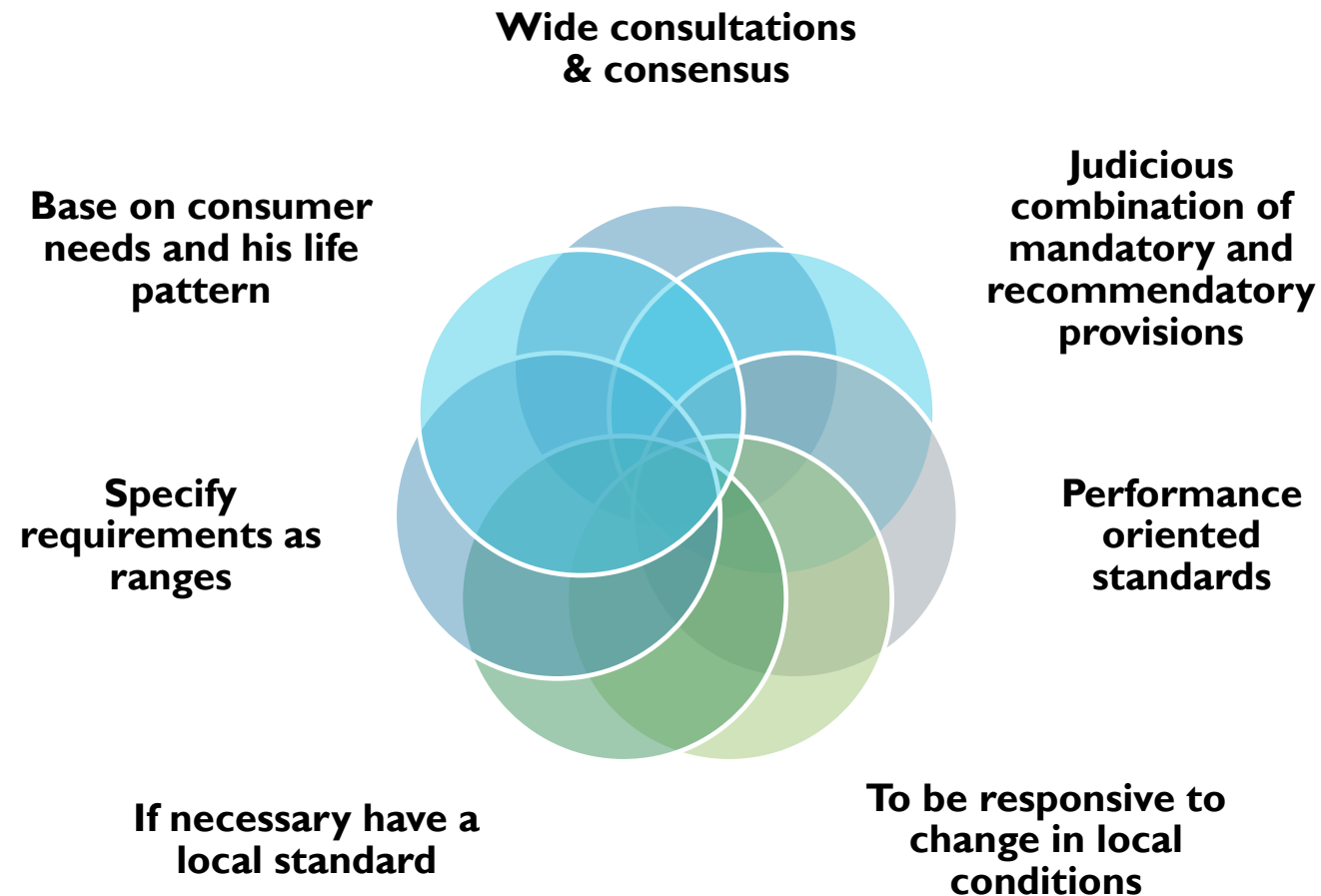
**IS 4746 : 2023** *Transport of dogs and cats by rail road and air — Code of practice (first revision)*

# CRITICISM ON STANDARDS

- Not flexible
- Unrelated to conditions in particular places
- Often arbitrary
- Developed and used without regard to their economic implications
- They inhibit innovation



# MEASURES TO OVERCOME THESE PROBLEMS



# THANK YOU



For more information,  
visit [www.bis.gov.in](http://www.bis.gov.in)

Or contact:

Head, Food and Agriculture Department

Bureau of Indian Standards

Email: [fad@bis.gov.in](mailto:fad@bis.gov.in)

Phone: 011-23231128