



उत्पाद मैनुअल

FISH FEED – SPECIFICATION PART 3 MARINE SHRIMP FEED

IS 16150 (Part 3): 2023 के अनुसार

PRODUCT MANUAL

FOR FISH FEED – SPECIFICATION PART 3 MARINE SHRIMP FEED

ACCORDING to IS 16150 (Part 3): 2023

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो(अनुरूपता मूल्यांकन)विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	मानक संख्या IS No.	:	IS 16150 (PART 3): 2023
	शीर्षक Title	:	Fish Feed – Specification Part 3 Marine Shrimp Feed
	संशोधनों की संख्या No. of amendments	:	Nil
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	The ingredients listed in Annex B of IS 16150 (Part 3) shall only be used for manufacturing Marine Shrimp Feed. Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance).
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Each Variety to be drawn and tested to be included in the scope of licence.
c)	नमूने का परिमाण Sample Quantity	:	1 Kg Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since

			raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request		- Type - Species - Form: Granules / Pellets (where applicable) Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	All tests are possible to be carried out in a day except Phosphorous and Aflatoxin B1. Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा / Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 16150 (Part 3): 2023 with the following scope:		
	Name of the product	Fish Feed – Specification Part 3 Marine Shrimp Feed	
	Type	Starter Grade / Grower Grade / Finisher Grade	
	Species	Penaeus Monodon / Penaeus Indicus / Penaeus Vennamei	

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

ANNEX – A
LIST OF TEST EQUIPMENTS
(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1.	Water Stability of Pellets, Cl. 4.2.2	• Oven • Nylon Mesh • Sieve 2.4 mm • Balance • Glass Beaker (1 L) • Stop Watch • Seawater (30 ppt) • pH meter
2.	Moisture, Clause 4.3 & Table 1, 2 and 3	Method as per IS/ISO 6496: • Analytical Balance, capable of weighing to the nearest 1 mg. • Container, of non-corrodible metal or glass, provided with a sufficiently tight-fitting lid, and having a surface allowing the test portion to be spread to about 0,3 g/cm². • Electrically heated oven (Capable of maintaining 103 ± 2 °C) • Electrically heated vacuum oven (Capable of maintaining 80 ± 2 °C and producing pressure below 13 kPa) • Desiccator • Sand Method as per IS 7874 (Part 1): • Grinder • 1.00 mm IS sieve • Weighing Balance LC 1g • Aluminium dish with cover (Dia 50 mm depth 40 mm) • Air Oven • Desiccator
3.	Crude Protein (N × 6.25), Clause 4.3 & Table 1, 2 and 3	Method as per IS/ISO 5983 (Part 1): • Potassium Suphate • CuO/CuSO₄.5H₂O (Catalyst) • Sulphuric Acid • Paraffin wax • Saccharose • Acetanilide/Tryptophan (Standard Materials) • Sodium Hydroxide • Suphuric Acid/Boric Acid (Collecting liquid) • Mixed Indicator (methyl red and methylene blue) • pH indicator paper • Boiling aid (Granulated pumice stone/glass beads/carborundum chips)

		- Analytical Balance - Digestion, Distillation and Titration apparatus Method as per IS/ISO 5983 (Part 2): - Kjeldahl Catalyst Tablets - Sulphuric Acid - Hydrogen Peroxide Solution - Antifoaming Agent - Sodium Hydroxide - Methyl red solution - Bromocresol green solution - Concentrated boric acid - Dilute Boric Acid - Hydrochloric acid standard volumetric solution - Ammonium Sulphate - Ammonium iron (II) sulphate - Tryptophan/Acetanilide - Sucrose - Analytical Balance - Digestion Block - Digestion Tubes - Exhaust Manifold - Centrifugal Scrubber Apparatus (filter pump or aspirator) - Automatic pipettes - Graduated Measuring Cylinder - Distillation unit - Conical flasks - Burette - Automatic Titrator Method as per IS 7874 (Part 1): - Kjeldahl Flask - 500 ml capacity - Distillation Assembly - Potassium Sulphate or Anhydrous Sodium Sulphate - Copper sulphate - Concentrated Sulphuric Acid - Sodium Hydroxide Solution - Standard Sulphuric Acid – 0.5 N - Standard Sodium Hydroxide Solution – 0.25 N - Methyl Red Indicator Solution - Boric Acid Solution - Magnesium Oxide
4.	Crude Fat, Clause 4.3 & Table 1, 2 and 3	Method as per IS/ISO 6492: - Water (at least grade 3 of ISO 3696) - Sodium Sulphate (anhydrous) - Light Petroleum - Silicon Carbide chips/Glass beads - Acetone - Hydrochloric acid

		• Filtration aid (eg. Diatomaceous earth) • Extraction thimbles • Soxhlet-type extractor • Heating apparatus • Drying oven • Electrically heated vacuum oven • Desiccator Method as per IS 7874 (Part 1): • Petroleum Ether • Hexane, food grade • Weighing balance • Aluminium dish with cover (Dia 50 mm depth 40 mm) • Soxhlet extractor • Steam bath • Desiccator
5.	Crude Fibre, Clause 4.3 & Table 1, 2 and 3	• Water (at least grade 3 of ISO 3696) • Hydrochloric acid • Sulphuric acid • Potassium hydroxide solution • Acetone • Filter aid eg. Sea sand or Celite 545 • Antifoam Agent eg. n-octanol • Light Petroleum • Grinding device • 1 mm sieve • Analytical balance • Filter crucibles of quartz/porcelain/hard glass with fused sintered filter plate • Porcelain sieve plates • Incineration dishes • Beaker/conical flask • Drying oven • Desiccator • Muffle furnace • Cold extraction device • Heating device
6.	Acid Insoluble Ash, Clause 4.3 & Table 1, 2 and 3	Method as per IS 7874 (Part 1): • Weighing Balance • Porcelain/silica/platinum dish • Meker burner • Muffle furnace • Conc. Hydrochloric acid • Electric Air oven • Watch glass • Water bath • Whatman filter paper no. 42 • Desiccator Method as per IS 14826:

		• Dilute hydrochloric acid • Trichloroacetic acid solution 200 g/l and 10g/l • Analytical Balance • Muffle furnace • Drying oven • Hot plate/gas burner • Boiling water bath • Incineration dish • Desiccator
7.	Gross Energy, Clause 4.3 & Table 1, 2 and 3	Method as per D1 of IS 16150 (Part 3) • Adiabatic bomb calorimeter • Pellet press • Metallic crucible • Hot air oven • Balance • Fuse wire • Cotton thread • Beaker • Burette • Pipette • Whatman filter paper no. 1 • Benzoic Acid (Calorimeter Grade, Gross Energy Content 6318 cal/g) • Distilled Water • Oxygen Gas • Barium Hydroxide • Sodium Carbonate • Hydrochloric Acid • Methyl Red Indicator • Phenolphthalein Indicator Method as per D1 of IS 16150 (Part 3): Equipments/Chemicals as listed under the following test parameters: Moisture, crude protein, crude fat, crude fibre, and total ash
8.	Phosphorous, Clause 4.3 & Table 1, 2 and 3	Method as per IS 14828: • Water (at least grade 3 of ISO 3696) • Calcium Carbonate • Hydrochloric acid • Nitric acid 1 mol/l & 14 mol/l • Sulphuric acid • Ammonium heptamolybdate solution • Ammonium monovanadate solution • Molybdovanadate reagent • Reference solution • Phosphorous standard solution • Ashing crucibles • Electric muffle furnace capable of being maintained at a temperature of 550 °C + 20 °C • Kjeldahl flask of capacity 250 ml

		• One-mark volumetric flask • Spectrometer fitted with 10 mm cells, suitable for measurements at a wavelength of 430 nm • Glass test tube • Sand bath • Beaker • Graduated pipettes Method as per IS 7874 (Part 2): • Conc. Nitric acid • Nitric acid (1:1) • Ammonium molybdate stock solution • Nitric acid solution 2 % (m/v) • Potassium nitrate 3 % (m/v) • Standard Sodium Hydroxide solution • Standard nitric acid solution • Phenolphthalein indicator solution • Beaker 150 ml • Whatman filter paper no. 42 • Gooch crucible • Titration Assembly
9.	Aflatoxin B ₁ , Clause 4.5	Method as per IS/ISO 14718: • DM water • Conc. Sulphuric acid • Acid-washed Celite 545 or product of equivalent quality • Florisil sep-pak style cartridge, waters no. 51960 or product of equivalent quality • C₁₈ Sep-pak style cartridge, waters no. 51910 or product of equivalent quality • Acetone • Methanol • Acetonitrile • Chloroform • Mixture of acetone and water (98 + 2 by vol.), (15 + 85 by vol.), (5 + 95 by vol.) • Mixture of methanol and water (20 + 80 by vol.) • Conc. Nitric acid • Potassium bromide • General HPLC system • Sodium hypochlorite solution • Nitrogen gas • Aflatoxin B₁ standard material • Solvent filtration system • Ultrasonic bath • Microsyringe • Glass stoppered calibrated tubes • Spectrometer • Conical flask • Mechanical shaker

		• Fluted filter paper of diameter 24 cm • Luer chloroform-resistant threeway stopcock • Chemical resistant syringe 10 ml • Glass column • Rotary vacuum evaporator
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ANNEX – B

SCHEME OF INSPECTION AND TESTING

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipment.

2. TEST RECORDS - The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. PACKING AND MARKING - The Standard Mark as given in Schedule of the licence shall be suitably marked on each bag and label, tag or leaflet (as applicable), provided always that the material in each bag to which this mark is thus applied conforms to every requirement of the specification.

3.1 Packing – The material shall be packed in clean, dry and polyethylene-lined bags (jute/laminated bags/HDPE/PP bags). The mouth of each bag shall be either machine stitched or rolled over and hand-stitched.

3.2. Marking – Each bag of Marine Shrimp Feed shall be suitably marked so as to give the information mentioned under clause 5.2.1 of IS 16150 (Part 3), legibly and indelibly. In addition, the following details shall be mentioned on each bag of Marine Shrimp Feed legibly and indelibly.

a) BIS Licence No. CM/L.

b) BIS website details i.e –“For details of BIS Certification please visit www.bis.gov.in”.

In addition, each bag of marine shrimp feed shall have a label or tag attached to it or contain a leaflet giving the information mentioned under clause 5.2.2 of IS 16150 (Part 3).

4. CONTROL UNIT – For the purpose of this scheme, the quantity of Marine Shrimp Feed of a **particular variety** manufactured under similar conditions of production in a day.

5. LEVELS OF CONTROL-The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. RAW MATERIAL - The ingredients listed in Annex B of IS 16150 (Part 3) shall only be used for manufacturing marine shrimp feed.

If antibiotics or other additives are incorporated in to the marine shrimp feed, these shall be declared on the label. The use of any of the antibiotics and other Pharmacologically Active Substances mentioned under clause 4.3 of IS 16150 (Part 3) shall be prohibited in any unit manufacturing marine shrimp feed.

7. REJECTION - Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
(Recommended Levels of Control by BIS - For Guidance Only)

(1) Test Details				(2) Test equipment requirement R: required (or) S: Sub-contracting permitted	(3) Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.1.1	Ingredients	Annex B	IS 16150 (Part 3)	--	Records of each consignment to be maintained indicating the test results, the quantity added etc.		
4.2.1	Feed Form and Size	4.2.1	--	R	Firm to have adequate in-process controls to check compliance of this parameter as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity.		
4.2.2	Water Stability of pellets	Annex C	16150 (Part 3)	R	one	Each Control Unit	
4.3 & Table 1, 2 and 3	Moisture	--	IS/ISO 6496 or IS 7874 (Part 1)	R	one	Each Control Unit	
-do-	Crude Protein	--	IS/ISO 5983 (Part 1) or IS/ISO 5983 (Part 2) or IS 7874 (Part 1)	R	one	Each Control Unit	
-do-	Crude Fat	--	IS/ISO 6492 or IS 7874 (Part 1)	R	one	Each Control Unit	
-do-	Crude Fibre	--	IS/ISO 6865	R	one	Each Control Unit	
-do-	Acid Insoluble Ash	--	IS 14826 or IS 7874 (Part 1)	R	one	Each Control Unit	
-do-	Gross Energy	Annex D	16150 (Part 3)	S	one	Once in a month	It is also to be tested whenever there is change of any raw material.
-do-	Phosphorous	--	IS 14828 or IS 7874 (Part 2)	R	one	Each Control Unit	
4.5	Aflatoxin B1	--	IS 13427 or IS/ISO 14718	S	one	Once in 6 months or whenever there is change in raw material supplier	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.