INDIAN STANDARDS FOR

FISH FEED

PREPARED BY

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Introduction

Aquaculture is making a rapid progress within the country. A large number of aquaculture farms have been established where aquaculture has been undertaken on scientific lines. Fish feed is the first major step in the aquaculture production chain. For production of good quality fish at minimum cost, the fishes are properly fed so as to meet their nutritional requirements. To keep pace with the development of aquaculture, the manufacture of fish feeds and their marketing has also commenced in the country.

The nutrient requirements are for different physiological stages of lifecycle as per the practice followed in the farming and the feed types available. The nutrient requirement from larvae to brood stock has been considered and the total package of feeds is to cater to the needs for the whole life cycle. Fish Feed Standards would be of assistance to the rapidly developing aquaculture and fish feed manufacturing industry.

Feeds can transmit harmful agents directly or by attracting pests. Feed ingredients should not contain unsafe levels of pesticides, chemical contaminants, microbial toxins, or other adulterated substances.

This compendium aims at providing an overview of Indian Standards on Fish Feed, offering insights into their species. There are 7 standards available on Fish Feed depending upon different species of fish.

By compiling relevant standards on Fish Feed in a single document, this compendium serves as a ready reference for professionals involved in manufacture of fish feed which are reliable and safe.

1) IS 16150 (Part 1) : 2023 Fish feed - Specification Part 1 Carp feed

Scope: 1. The standard prescribes the requirements and the methods of sampling and test for Indian major carp (Catla catla, Labeo rohita and Cirrihina mrigala) feeds. These feed requirements are intended for carps cultured in earthen pond with considerable natural productivity and the feeds recommended are of supplementary nature only.

Key Provisions:

1. The nutrient requirements for six different physiological stages as per the practice followed in the farming are mentioned in the standard and accordingly the feed had been divided into 6 types catering to the needs for whole lifecycle.
2. Six types of Carp Feed available are : a) Carp Larval Feed (CLF) b) Carp Nursery Feed (CNF) c) Carp Starter Feed (CSF d) Carp Grower Feed (CGF) e) Carp Finisher Feed (CFF) —f) Carp Brood Feed (CBF)
3. Carp Feed shall be free from rancidity, adulterants, moulds and insect infestation.
4. Physical Characteristics covering Feed Form and Size for different types of Carp feed and Water Stability of Pellets including its corresponding method of test
5. Variety of ingredients can be used for manufacturing Carp Feed like Grains and seeds, Grain By-Products, Oil Cakes and Meals, Tubers and Roots, Animal Products, Oils and Fats, Minerals and Vitamins, Industrial By-Products, Other Ingredients (details can be referred from Annex B of standard)
6. Various requirements for carp feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
7. Requirements of Packaging materials ensuring safety of Carp Feed are also available in the standard.

2) IS 16150 (Part 2) : 2025 Fish Feed — Specification Part 2 Magur and Singhi Feed (*First Revision*)

Scope : The standard prescribes the requirements and the methods of sampling and testing for air breathing catfish like, Magur (Clarias magur) and Singhi (Heteropneustes fossilis) feeds.

Key Provisions:

1. Air breathing catfish has been classified into 4 types: a) Air-breathing catfish larval feed (ABCLF) b) Air-breathing catfish fry feed (ABCFF) c) Air-breathing catfish grow-out Feed (ABCGF) d) Air-breathing catfish brood feed (ABCBF)
2. The air-breathing catfish feed shall be free from rancidity, adulterants, moulds and insect infestation.
3. Physical Characteristics covering Feed Form and Size for different types of Air Breathing Catfish and Water Stability of Pellets including its corresponding method of test
4. Variety of ingredients used for manufacturing Air Breathing Catfish Feed includes Grains and seeds, Grain By-Products, Oil Cakes and Meals, Tubers and Roots, Animal Products, Oils and Fats, Minerals and Vitamins, Industrial By-Products, Other Ingredients (details can be referred from Annex B of standard)
5. Various requirements for carp feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
6. Requirements of Packaging materials ensuring safety of Air breathing catfish Feed are also available in the standard.

3) IS 16150 (Part 3) : 2023 Fish Feed — Specification Part 3 Marine Shrimp Feed (First Revision)

Scope : The standard prescribes the requirements and the methods of sampling and test for marine shrimp (Penaeus monodon, Penaeus indicus and Penaeus vannamei) feeds for their grow-out culture

Key Provisions:

1. Marine Shrimp Feed has been classified into 3 types a) Starter Grade b) Grower Grade c) Finisher Grade
2. The marine shrimp feed shall be fresh and free from moulds and insect infestation.
3. Physical Characteristics covering Feed Form and Size and Water Stability of Pellets including corresponding method of test
4. Ingredients used for manufacturing Marine Shrimp Feed includes Ingredients of Animal Origin, Ingredients of Plant Origin and other Ingredients. (details can be referred from Annex B of standard)
5. Various requirements for carp feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
6. Requirements of Packaging materials ensuring safety of Air breathing catfish Feed are also available in the standard.

4) IS 16150 (Part 4) : 2023 Fish Feed — Specification Part 4 Freshwater Prawn Feed *(First Revision*)

Scope : The standard prescribes the requirements and the methods of sampling and test for freshwater prawn feed.

Key Provisions:

1. Fresh Water Prawn has been divided into 4 types depending upon stage of life cycle like Starter grade feed (I, II, III), Grower grade, Finisher grade, Brood-stock diet
2. The feed shall be free from rancidity, adulterants, moulds and insect infestation. All grades of feed shall be of sinking type in nature.
3. Ingredients used for manufacturing Fresh Water Prawn feed includes Grains and seeds, Grain By-Products, Oil Cakes and Meals, Tubers and Roots, Animal Products, Oils and Fats, Minerals and Vitamins, amino Acids and other Additives, Industrial By-Products, Other Ingredients (details can be referred from Annex B of standard)
4. Physical Characteristics covering Feed Form and Size and Water Stability of Pellets including corresponding method of test
5. Various requirements for Fresh water Prawn Feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
6. Requirements of Packaging materials ensuring safety of Air breathing catfish Feed are also available in the standard.

5) IS 16150 (Part 5) : 2023 Fish Feed — Specification Part 5 Pangasius Feed

Scope: The standard prescribes the requirements and the methods of sampling and test for Pangasius (farmed fish of Pangasidae family, primarily, Pangasianodon hypophthalmus) feeds for their grow-out culture.

Key Provisions:

1. Pangasius Feed has been classified into 4 types: a) Nursery b) Starter Feed c) Grower Feed d) Finisher Feed
2. The Pangasius fish feeds shall be fresh, free from insect infestation, and moulds
3. Ingredients used for manufacturing Pangasius Feed includes Ingredients of Animal Origin, plant Origin and other ingredients (details can be referred from Annex B of standard)
4. Physical Characteristics covering Feed Form and Size and Water Stability of Pellets including corresponding method of test
5. Various requirements for Pangasius Feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
6. Requirements of Packaging materials ensuring safety of Pangasius Feed are also available in the standard.

6) IS 16150 (Part 6) : 2023 Fish Feed — Specification Part 6 Marine Carnivorous Fish Feed

Scope: The standard prescribes the requirements and the methods of sampling and test for marine carnivorous fish (Lates calcarifer, Rachycentron canadum, Trachinotus blochii and Trachinotus mookalee) feeds. This feed requirements included are for marine carnivorous fish cultured in earthen pond/tanks/cage with considerable natural productivity and the feeds recommended are of supplementary nature only.

Key Provisions:

1. Marine Carnivorous Fish Feed has been classified into 5 types a) Marine Carnivorous Fish Fry Feed (MCFFF) b) Marine Carnivorous Fish Nursery Feed (MCFNF) c) Marine Carnivorous Fish Starter Feed (MCFSF) d) Marine Carnivorous Fish Grower Feed (MCFGF) e) Marine Carnivorous Fish Brood Feed (MCFBF)
2. The marine carnivorous fish feed shall be free from rancidity, adulterants, moulds and insect infestation.
3. Ingredients used for manufacturing Grains and seeds, Grain By-Products, Oil Cakes and Meals, Tubers and Roots, Animal Products, Oils and Fats, Minerals and Vitamins, Industrial By-Products, Other Ingredients (details can be referred from Annex B of standard)
4. Physical Characteristics covering Feed Form and Size and Water Stability of Pellets including corresponding method of test
5. Various requirements for Marine Carnivorous Fish Feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
6. Requirements of Packaging materials ensuring safety of Marine Carnivorous Fish Feed are also available in the standard.

7) IS 16150 (Part 7) : 2023 Fish Feed — Specification Part 7 Tilapia Feed

Scope: The standard prescribes the requirements and the methods of sampling and test for Tilapia (Oreochromis niloticus) fish feed. This feed specification is for Tilapia cultured in earthen pond/cages in open water and the feed recommended is of supplementary nature only.

Key Provisions:

1. Tilapia Feed has been classified into 5 types a) Tilapia Nursery Feed (TNF) b) Tilapia Starter Feed (TSF) c) Tilapia Grower Feed (TGF) d) Tilapia Finisher Feed (TFF) e) Tilapia Broodstock Feed (TBF)
2. The Tilapia feed shall be free from rancidity, adulterants, moulds and insect infestation.
3. Ingredients used for manufacturing Tilapia Feed includes Grains and seeds, Grain By-Products, Oil Cakes and Meals, Tubers and Roots, Animal Products, Oils and Fats, Minerals and Vitamins, Industrial By-Products, Other Ingredients (details can be referred from Annex B of standard)
4. Physical Characteristics covering Feed Form and Size and Water Stability of Pellets including corresponding method of test
5. Various requirements for Tilapia Feed are available like Moisture, Crude Protein, Crude fat, Crude fibre, Acid insoluble ash, Gross energy, Antibiotics, Additives and Aflatoxin B1 and their corresponding method of tests.
6. Requirements of Packaging materials ensuring safety of Tilapia Feed are also available in the standard.