

Programme: Bachelor of Science (Second Year)

Subject: Zoology

Paper Code: ZOS 101

Paper Title: Aquarium Fish Keeping

Unit: 3 – Food and feeding of Aquarium fishes

Module Name: Introduction to Fish Feed

Module No: 15

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Notes

Good food provides us nutrients and these nutrients provide us energy and are very important for our growth, maintenance of our body, to develop ability to resist diseases and for reproduction purpose.

Fishes also requires food as it provides them energy which is needed for their healthy growth, for movement in water and for all the other activities they engage in.

Fish feed is the food which provides nutrition to the fishes, so that the fishes are able to grow to their full potential and live a healthy life.

Fish feed for the aquarium fishes are can be classified into two types:

Live fish feed is where live organisms are used to feed the aquatic fishes.

Processed fish feed are the processed foods for the aquatic fishes, which supply almost all the ingredients which contain protein, fat, carbohydrate, vitamin, minerals which are important for the optimal growth and health of fish.

Categories of fish (based on the type of food they prefer)

1. Herbivores

Herbivore fishes prefer green plants as their food. Depending on their body size the fishes might feed on microscopic plants (like smaller algae or phytoplankton) or macroscopic plants. Herbivores are considered to be the most efficient users of energy because they directly feed on plants and plants are the primary source of food energy.

2. Detritus feeders

Detritus feeders are usually the ones which derive their nutrition from the dead organic matter. It may include dead plants or dead animals.

3. Carnivores

Carnivore fishes feed on other animals. Carnivore fishes are also known as piscivores. These fishes consume zooplanktons, larvae of insects, frogs, snails, molluscs, crustaceans and other fishes.

4. Omnivores

Omnivores are the feeders which feed on both plants and animals and also detritus, depending on whatever is available.

Examples of aquarium fishes:

Herbivores: Plecos, African cichlids, Pacus and Silver dollar fish

Carnivores: Jack Dempsey Cichlid, Betta fish.

Omnivores: Gold fish, mollies and cat fish.

Nutrients in fish feed

Carbohydrates, proteins, lipids and fats, vitamins and minerals are the nutrients that are needed by the fishes.

a) Proteins

The fry fishes require a higher amount of proteins in nutrition. This is because proteins are essential for body growth. So during the growing phase of the fish protein is very important. Proteins also provide some amount of energy to the fishes. Protein requirements is mostly affected by various factors like size of the fish (maturity stage of the fish), water temperature, feeding rate, availability and quality of food, oxygen levels and so on.

Generally the protein requirements for a carnivorous fish are higher than that of the omnivores and herbivores.

b) Lipids and fats

Lipids are the energy providing nutrients for the fishes. Lipids have higher energy density than proteins and carbohydrates. Lipids supply the essential fatty acids and serve as transporters for fat soluble vitamins. When the diet of fish is rich in lipids, lipids usually gets deposited into fish muscle. Such fishes become a good source of lipids for humans.

c) Carbohydrates

Carbohydrates are an important and major source of energy for the mammals but are not used efficiently by the fishes. Carbohydrates are stored as glycogen in fishes and are mobilized to satisfy energy demands.

d) Vitamins

Vitamins are very important for the growth and also for metabolism in fish.

Vitamin A is generally important in building resistance against diseases in fishes. It is also important for the epithelial tissues of the fish.

For proper usage of proteins, carbohydrates and lipids Vitamin B is very important.

Vitamin D is mostly involved in maintenance of the skeleton of the fishes.

Vitamin K is involved in energy metabolism.

e) Minerals

Minerals regulate the osmotic balance, help in bone formation and provide strength and rigidity to the skeleton of fishes.

All the nutrients are essential to the fishes. Care should be taken that all these nutrients are present in the fish feed so that the fishes get the benefit of each of the nutrients.