

Nutritional Requirements of Ornamental Fish

The nutrition of ornamental fish is concentrated around 3 major sources of energy, including:

- Carbohydrates (starchy food, e.g. plants, – difficult to digest by carnivores)
- Lipids (fats and oils, plants/animals tissues- easily digested)
- Proteins (Mostly from animals)

Additionally, vitamin enriched food sources are required for healthy growth in captivity.

Proper feeding is essential to the development of healthy fish that are resistant to certain diseases. Nourishing feeds will further enhance the productivity of the animals by encouraging the growth of muscles tissues and developing reproductive cells. It must be noted, however, that not all food consumed by fish is converted to usable energy. As a result, the weight gained by the fish is not equal to the weight of the food eaten by the fish.

Pay attention to the nutritional profile of the feed sources chosen and how they meet the growth stage and dietary needs of the fish. For instance, younger fish may require a diet higher in fat than that of an adult fish and require multiple meals per day. As the fish matures the amount and type of feed fed will change.

Feeding Live Food

The choice to feed your ornamental stock with live food, instead of dry manufactured feed, is mainly determined by the growth stage of the fish. Newly hatched fish desires food of a very small size due to their jaw size and the immaturity of the digestive system during the early stages of life. Live foods, such as brine shrimp and mosquito larvae, that are readily absorbent, meet these requirements and provide the high-protein needs of larvae. However, do not rush to serve live food as the first meal. Generally, after a fish hatches or a fish gives birth they have what is called a yolk sac, which will be absorbed in approximately 2 – 3 days. After this time, live food can be given.

Live foods are highly nutritious sources of micro and macro nutrients, vitamins, fats, proteins and carbohydrates and contribute significantly to increased growth rates. The use of live foods simulates the natural eating environment for captive aquatic life, making the stock more vibrant and colourful.

Furthermore, live food is an excellent conditioning agent for brood stock. Its high nutrient concentration encourages spawning activities; hence increasing your breeding success rates.

Types of Live Food

BENEFITS	Aquatic Plants		Aquatic Animals					
	Greenwater	Duckweed	Daphnia/Moina (water fleas)	Artemia (Brine Shrimp)	Rotifers (Wheeled animals)	Mosquito	Bloodworm	Microworm
Nutritional								
Amino acids		√						√
Lysine		√						
Methionine		√						
Vitamin B-12	√							
Beta-carotene	√	√		√				

Xanthophyll		√						
Protein	√	√	√	√	√	√	√	√
Lipids & Fatty acids			√	√			√	√
Iron							√	
Ascorbic acid		√						
Fibre		√						
Other								
Resembles animal protein		√						
Removes ammonia and other dissolved nutrients		√			√			
Improves colour/hue	√	√		√				
Probiotics for disease control	√							

Feed Storage

In rearing fish, we endeavour to provide our animals with optimal feed. Over time, however, these will deteriorate, especially if improperly stored. The storage time varies based on the type of feed being used and the environmental conditions under which it is stored. At best, store manufactured feed for a maximum of three (3) months. Opened packages should be discontinued after four (4) weeks due to feed's tendency to rapidly becoming rancid; so purchase only what you need monthly to avoid wastage. The rapid rotation of feed will also minimise the likelihood of pest infestation which can radically reduce the quality and quantity of feeds.

Discard the feed if it shows evidence of spoilage, including moulds, discolouration, clumping and foul odours. Spoiled feed should not be fed to fish as they may produce aflatoxins, which can:

- reduce growth rates
- lower production efficiency
- destroy the immune system, thereby causing disease
- kill fish

Concentrated (Dry) Feed

The range of dry feed consists of extruded feeds, hard pellets, crumbles, and flakes. These should be stored in a cool, dry place. If storage is done in bins outside, the holding area should be elevated and moisture free. Ensure to seal the containers tightly at all times to reduce exposure to moisture.

Dry feed may be frozen – but not refrigerated - to extend the shelf life of the product.

Fresh and Frozen Feed

These should be refrigerated at all times. Avoid thawing and re-freezing. Thaw only what is needed and allow it to defrost to room temperature before feeding your fish. It is also recommended to wash frozen foods under running tap water to remove any dissolved nutrients that may pollute the water.