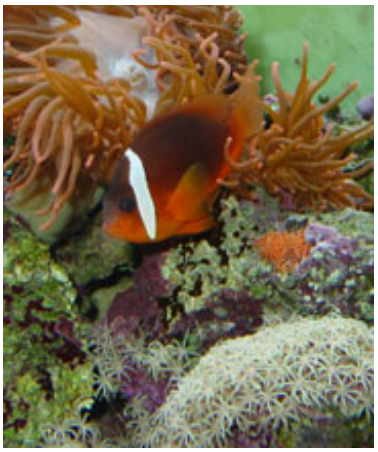
Proper Fish Diet

Drs. Foster & Smith Educational Staff

By Scott W. Michael



As with humans, or any other animal, a poor diet can equate to general ill health and greater susceptibility to pathogens. Some of the more commonly observed problems with poorly fed saltwater fish include lateral line and fin erosion, weight loss, color infidelity, listlessness and disease outbreaks.

Fish need protein, lipids, carbohydrates, vitamins and minerals. Unfortunately few foods contain all or enough of these essential nutrients. Therefore, the best way to ensure all their nutritional prerequisites are met is to give them a varied diet. This means a combination of flake, frozen and fresh foods. Relatively few reef fishes are specialized feeders. For example, the vast majority of carnivores feed on a number of different types of prey, not just a single animal species. With your reef fish, variety is essential to ensure their long term health.

One good staple food is frozen sea food. Shrimp, clams, squid and marine fish flesh, rinsed and finely chopped are great foods.

I will take frozen shrimp, squid or fish flesh and run it over a cheese-grater to produce bite sized shavings for my fish. Many graters have holes of varying size so you can adjust the size of the shavings to better suit the size of the fish your feeding. If feeding marine fish flesh, avoid oily species (e.g., tuna, herring) as they will cause a fatty film on the water's surface. Also beware that fresh foods can quickly become rancid, polluting the aquarium. Therefore, it is important to remove uneaten pieces from the aquarium bottom and filter soon after it is introduced to the tank. Although some have suggested that feeding fresh or frozen seafood can spread pathogens to your fish, to the best of my knowledge, I have never had this happen.

One of my favorite foods is frozen mysid shrimp. I have found that there are many fish that may normally be difficult to feed, but will accept these succulent little crustaceans with gusto! They are also a nutritious food, relatively high in protein and fats. I am so excited about these crustaceans as a food source that I've teamed-up with Biotope Research Laboratories to offer whole, vitamin enriched mysid shrimp (Lifeline Scott Michael Mysis Shrimp).

Unfortunately, not all frozen mysid shrimp are created equal. Some brands tend to consist more of mysid fragments rather than whole shrimp. The only downside with mysids is that they are not high in carotenoids. If you feed your fish only mysids, certain fish species may exhibit some color loss. I would recommend supplementing a mysid diet with some of the frozen preparations (e.g., Lifeline frozen foods) or flake food with added pigments.

I used to discourage the use of flake food as a staple diet for marine fishes, but there are some wonderful, nutrient-rich brands out there now that are not only good for your fish, but can help maintain their amazing colors. Vibra-Gro is one that I've had good success with. It has added pigments that will reduce the likelihood that a spectacular fish will change from dramatic to dull.

There are also some wonderful frozen preparations made-up specifically for fishes of the various feeding guilds, like carnivore diet and herbivore diet, or even specific taxonomic groups. For example, a specific diet for angelfishes (which includes sponge fragments), a diet for triggerfishes and also diets for small sharks. The Lifeline Foods, produced by Biotope Research, are my favorite frozen foods. They include a mix of marine organisms (e.g., scallop, fish, crustacean), supplemented with pigments, vitamins and essential amino acids, and make great staple foods.

I do feed some frozen brine shrimp and krill, but would never recommend you use it exclusively. Both these foods, and many other crustaceans, are rich in carotenoid pigments and do help fish retain their bright colors. Another way to ensure your fish are getting their nutritional "fix" is to soak fish food in an additive like Selcon. This contains omega-three fatty acids and a stabilized form of Vitamin C, vital nutrients that are often missing in aquarium fish diets. It works particularly well if you are feeding freeze-dried foods, like krill, which soak it up like a sponge.

If you are keeping herbivores (e.g., tangs) and omnivores (e.g., angelfishes) in your aquarium, you will need to supplement their diet with vegetables. A great supplement for plant-eaters are the sheets, flakes or chunks of dried macroalgae that are now on the market. For example, Julian Sprung's SeaVeggies Seaweed Flakes are chopped algae that

Symptoms of Nutritional Deficiencies

- Darkening of body or fins
- Reddening of body and fins
- Color loss
- Fin erosion
- Lateral line erosion
- Lower jaw erosion
- Skin lesions
- Increased sensitivity to bacterial infections
- Slow wound repair

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most fish will accept with gusto. These products enable the aquarist to feed their herbivores brown, green, and red algae species, which should be fed on a daily basis. There are suction cup feeders on the market you can stick on the inside of the aquarium, making it easier for the fish to browse on the vegetable matter.

I also recommend feeding some live foods and these can be especially helpful if you are trying to get a finicky fish to eat. I have found most fish love live black worms, but I am very careful not to throw too many of them in the aquarium at once since they quickly die and decompose. Live brine shrimp and ghost shrimp are also popular with many marine fish and freshwater crayfish and fiddler crabs are great treats for predators that like large crustaceans. Freshwater feeder fish, like mollies, guppies and goldfish are very popular foods, but you should not feed your predators only live freshwater fish since they lack fatty acids that marine fishes need for good health. Live marine mussels, which are sometimes available in the seafood section of grocery stores or in fresh fish shops, are a great food to initiate feeding in finicky feeders. These mollusks are particularly valuable for enticing picky eaters, like certain butterflyfishes and angels. Simply break the shell open with a screwdriver and a hammer and then throw the open clam into the tank. The feeding frenzy that ensues is remarkable!

A varied and proper diet is just as important as temperature and water quality. If a fish is fed a diet that lacks necessary nutrients, its immune system will be weakened. But if provided with a proper diet, such as a herbivore receiving the high quality plant material it needs, it has a better chance of warding off the parasites that are most likely to infect it. This will save you and your fish much grief in the long run!

- Slow wound repair
- Hemorrhaging of the gills
- Changes in blood chemistry
- Cloudy eyes
- Exophthalmus (abnormal protrusion of the eyeball)
- Weight loss
- Atrophying musculature
- Rapid breathing
- Loss of appetite
- Poor growth
- Convulsions
- Loss of equilibrium
- Erratic swimming
- Spiral swimming
- Mortality

The most important thing you can do is vary your fish's diet. Refer to the article to find the nutritional needs for your type of fish.

Biography

Scott W. Michael is an internationally recognized writer, underwater photographer and marine biology researcher specializing in reef fishes. He has served as scientific consultant for National Geographic Explorer and the Discovery Channel. Scott studied marine biology at the University of Nebraska and has kept tropical fishes for more than 25 years.

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