

Betta Fish



LIFE SPAN: 3-5 years **AVERAGE SIZE:** 2” to 3.5”+ depending on variety

WATER TEMPS: 76-78 °F

WILD HISTORY: Betta fish come from warm slow moving waters in Southeast Asia. They are commonly found in rice paddies and other slow moving bodies of water. In the late 19th century, selective breeding for fighting ability and fin patterns began, ultimately creating the fish we think of as the betta. Wild bettas, in contrast to the long finned aquarium strains, have very short and often less colorful fins.

PHYSICAL CHARACTERISTICS: Betta fish come in a variety of sizes, fin patterns, and colors. Examples of fin patterns include veil tail, half moon, crown tail, and double tail. A unique characteristic that bettas share with other anabantid fish is their labyrinth organ. The labyrinth organ is a specialized structure next to the gills that allows bettas to gulp air and extract oxygen from the air bubble. This adaptation allows bettas to survive in poorly oxygenated water such as the small cups they are usually sold in. For this reason bettas must always have access to air.

NORMAL BEHAVIOR & INTERACTION: Male betta fish are intolerant of each other but can be paired with female bettas so long as hiding spaces are provided. Male bettas can be housed in the same aquarium so long as a divider separates them from having contact with each other. In this type of setup, males will constantly display to each other across the barrier. Contrary to popular belief, bettas make great community tank members. They get along very well with other community type fish (see the **Freshwater Fish** handout for more information on community fish) as long as the other fish are not prone to nipping the long fins of bettas.

DIET: Bettas are predominately insectivorous. In the wild they eat small insect larvae and other invertebrates. In captivity, live foods such as mosquito larvae, black worms, or brine shrimp can be offered. In addition to live foods, many commercial diets are available that meet the diet requirements of bettas. Any well balanced community fish pellet or flake food is acceptable. Some companies even sell betta specific diets.

FEEDING: Bettas should be fed once to twice daily. The majority of their diet, about 75%, should be commercial pellet or flake food. The remainder of their diet should be live or frozen foods. It is important not to overfeed your betta. Overfeeding leaves uneaten food to decompose in your aquarium. Decomposing food adds extra waste compounds to the water which in turn cause increased algae growth. All the food given should be completely consumed within 5 minutes. If a lot of food is left over after 5 minutes, cut back the amount fed. Because bettas are a small fish, very small amounts of food are required to maintain them at a healthy weight.

RECOMMENDED SUPPLIES:

Aquarium – the minimum size for a betta should be a 2 ½ or 5 gallon aquarium	Light and hood – most aquarium lights are fluorescent strip lights. Aquarium hoods should fit snugly.
Aquarium heater – either a hang-on-the-side or submersible variety is acceptable	Thermometer – to monitor the aquarium’s temperature
Filter – The filter should be large enough to handle the size tank and number of fish in the tank.	Gravel and tank decorations – A 1-2 inch layer of gravel is recommended for most tanks.
Water test kit – necessary to ensure proper water quality	Air pump, airline hosing, and airstone – required to make sure water is well oxygenated. Not as important in betta only aquariums.

HOUSING & ENVIRONMENT:

ENCLOSURE SIZE: The enclosure should be a solid glass or acrylic aquarium. The minimum aquarium size for a betta is a 2 1/2 or a 5 gallon aquarium. Bettas are often sold in small cups at pet stores. While this is acceptable for shipping fish, this is not an acceptable forever home for your pet betta! Bettas can be kept in community aquariums of any size so long as their tank mates are peaceful and do not nip your betta's fins. Many people try to keep bettas in small cube tanks on desktops. While bettas will survive in these small enclosures, water changes need to be done more frequently and temperature regulation is much more difficult. Keeping a betta in a small unheated, unfiltered aquarium is not acceptable and many consider it cruel!

AQUARIUM SETUP: Once you have set up your aquarium, the system needs to cycle. Cycling refers to the nitrogen cycle within the aquarium. Fish produce waste as ammonia. Beneficial bacteria convert toxic ammonia into slightly less toxic nitrites and finally nitrates. Nitrates are non-toxic except in very high concentrations. When you first set up an aquarium, these beneficial bacteria are not present and the ammonia level will rapidly increase. As the first type of good bacteria becomes established, ammonia levels drop and nitrites rise rapidly. As the second type of good bacteria becomes established, nitrite levels drop and nitrates rise gradually. Water changes remove these accumulated nitrates. This entire cycle, from ammonia spike to gradually increasing nitrates, takes roughly 1-2 months and may produce some transient cloudiness in the water. If you have a betta only aquarium, pay close attention to your pet betta during this cycling period for any signs of stress such as heavy breathing, laying on the bottom, or sores on the body and/or fins. Do a partial water change immediately if you notice these signs! For larger community setups, it is important to buy only a few fish at first: 5 or less. After the first month, once the nitrogen cycle is nearly established, it is fine to add a few fish at a time until your aquarium is fully stocked. You can keep more than one male betta in a setup so long as there are dividers separating the fish. You can keep one male betta with one or more female bettas and other community fish without separating them.

NEVER BUY ALL YOUR FISH AT ONCE FOR AN AQUARIUM. YOU RISK CAUSING A TOXIC AMMONIA OR NITRITE SPIKE WHICH CAN KILL ALL THE FISH!

FILTRATION: The filter is one of the most important pieces of equipment in a betta's aquarium setup. Filters remove solid fish waste, remove dissolved chemicals from the water, and provide surface area for beneficial bacteria that detoxify harmful waste compounds in the water. There are many types of filters from hang-on-the-side to canister filters to sponge filters. The most important aspect of picking the right filter is making sure the filter is rated to the size aquarium you have. This information will be on the filter packaging. It is always better to over-filter an aquarium than under-filter. When selecting a filter for a betta aquarium, choose a filter that does not create strong currents in the aquarium, as bettas prefer slow moving water.

AERATION: An air pump, airline hosing, and airstone are provide oxygenation to the water. Air pumps are sold based on the size aquarium they are used for. Because bettas are able to extract oxygen from air using their labyrinth organ, an air pump, airline hosing, and airstone are not required for betta only aquariums. If bettas are kept in a community aquarium with other fish, an air pump, airline hosing, and airstone are required for proper oxygenation of the water.

LIGHTING: Fish require a clear day/night cycle to do well. Bettas are no exception to this rule. Since bettas come from tropical locations, the day night cycle should be as close to 12 hours on/12 hours off as possible. This is easily accomplished by buying a light timer. Keeping the lights on for more than 12 hours contributes to excess algae growth. Lighting comes in either fluorescent or incandescent fixtures. Fluorescent fixtures are better for aquariums containing live plants.

GRAVEL AND DECORATIONS: Which gravel and tank decorations are used largely depends on personal preference. Gravel comes in many different sizes and colors. If using gravel, rocks, or driftwood from outdoors, i.e. which were found outside somewhere, they need to be sterilized before using them in your aquarium. This is accomplished by boiling the items in a large pot of water for 20 minutes to 1 hour. If driftwood found outside is too large to boil, baking it in a low temperature oven (200F) for a few hours will also sterilize it. The wood must be monitored very closely/frequently as the baking process risks drying the wood out to the point where it can catch fire.

COVER: Make sure the aquarium has an escape-proof solid glass or plastic cover. It should fit snugly onto the tank and have an area in the back to cut out sections for the filter, heater, and airline tubing to enter.

TEMPERATURES: Aquarium temperatures should be monitored closely and kept at the temperatures listed at the top of this care sheet. An appropriately sized aquarium heater should be used to maintain proper temperature

for your betta fish. Sudden drops in temperature should be avoided as they stress fish and weaken their immune systems. Bettas are tropical fish and require a heater in their aquarium. Keeping betta fish at room temperature (below 74 degrees Fahrenheit) is not acceptable and many consider it cruel.

WATER QUALITY: Water quality parameters are important to monitor. Changes in water quality can stress your fish and increase their susceptibility to diseases and parasites. Bettas, like other fish from Southeast Asia, usually require neutral water with average hardness. Pet stores or your exotics veterinarian who works with fish can test water for you.

pH: measures the acidity or alkalinity of water

Ammonia: toxic to fish; it is excreted by fish and produced by decaying material (such as uneaten food)

Nitrite: toxic to fish, it is the first product of the nitrogen cycle

Nitrate: only toxic in high concentrations, it is the end product of the nitrogen cycle, removed via water changes

Alkalinity/Carbonate Hardness: measures the buffering capacity of your water/its resistance to pH changes

General Hardness: measures the total hardness of your water

ACCLIMATING and QUARANTINING NEW FISH: Acclimating and quarantining new fish are important topics to cover. Simply dumping fish into an aquarium with different water quality parameters from their current water can shock the fish's system and sometimes even cause death. Additionally, new fish can carry parasites and diseases that your fish may not have. Introducing new fish can therefore cause a disease or parasite outbreak with your previously healthy fish. New fish should be quarantined in a separate aquarium for 4 to 6 weeks. If you are keeping a single betta in an aquarium setup, this is not required. If any disease or parasite problems arise during the quarantine process, your regular tank full of your other fish are not exposed. If such a problem arises, we recommend contacting your exotics veterinarian for help diagnosing and treating the problem.

There are two ways to acclimate fish. The first method is to float the bag containing the new fish in your aquarium for 15 to 20 minutes to equalize temperatures. At that point you can add a ½ cup to 1 cup of tank water to the bag (depending on the bag size). Wait another 15 to 20 minutes and then add another ½ to 1 cup of tank water to the bag. Repeat this cycle until you've added 4-5 times the original volume of water to the bag containing your new fish. At this point, catch your new fish out of the bag and release it into your quarantine aquarium. Discard the bag and water that the new fish arrived in.

With the second method, dump the new fish and its water into a 5 gallon container (a clean bucket works well). Using airline tubing, start a siphon and trickle water into the bucket containing the new fish. After about an hour, or when the water volume in the bucket has more than tripled, you can net your new fish out of the bucket and introduce it to your quarantine tank.

HABITAT MAINTENANCE: Water changes are the most important aspect of keeping happy healthy betta fish! A partial water change, up to 1/3 of the total water volume, needs to be done every two weeks to remove built up wastes and harmful dissolved compounds. If you are keeping a betta in a small tank without a filter (NOT recommended), then water changes need to be done every 7 days or more frequently. The easiest way to do water changes is with a gravel vacuum. A gravel vacuum is a large diameter tube connected to thinner, longer tubing. A siphon is started with the waste water collected in a bucket or poured down the drain. The gravel vacuum sucks waste out of the gravel without removing the gravel itself. Replace removed water with dechlorinated water of the same temperature as the aquarium water. If using tap water, a commercial tap water conditioner must be used to remove chlorine and chloramines. Alternately, well water or spring water may be used to replace the removed water.

NEVER COMPLETELY EMPTY AND CLEAN AN AQUARIUM – YOU WILL REMOVE BENEFICIAL BACTERIA THAT DETOXYFIFY HARMFUL WASTE COMPOUNDS!

The media in an aquarium's filter should be changed once a month to once every other month. Never change all filter media at once unless your filter uses single replaceable cartridges.

Spot clean your aquarium as needed to remove uneaten food and scrape algae from the walls of the tank.

SIGNS OF A HEALTHY ANIMAL: Healthy betta fish have vibrant colors, smooth skin, and swim normally, with fins held away from the body. You may even notice courtship between males and females or display/fighting behavior between males that can see each other through dividers. Healthy betta fish will also have a voracious appetite, often learning to come to the front of the aquarium as you approach to feed them. We recommend routine water testing daily to weekly for a brand new aquarium setup and monthly for an established aquarium. Many pet stores or your exotics veterinarian who works with fish can test water for you. We also recommend a physical exam with an exotic pet veterinarian for pet betta fish if you notice a change in

appetite, swimming, breathing rate, or if you notice sores/growths on the fins and/or body of your pet. Physical exams are done using reversible sedation at your exotic veterinarian's office.

SIGNS OF ILLNESS: For most conditions, see your exotic pet veterinarian, who can properly address the condition and treat your pet. Most diseases in betta fish cause identical symptoms – basing treatment on how a fish looks often leads to mis-diagnosis and inappropriate treatment for diseases and/or parasites.

SOME COMMON PROBLEMS INCLUDE:

HEALTH ISSUE:	SYMPTOMS:	TREATMENT:
External Parasites	Rubbing on objects in the aquarium (flashing), small sores on the skin and fins, heavy breathing, clamped fins, white spots on the body	See an exotic pet veterinarian
Internal Parasites	White stringy feces, decreased appetite, thin stomach or swollen stomach, clamped fins	See an exotic pet veterinarian
Bacterial Infections	Decreased appetite, small sores on the skin and fins, rubbing on objects in the aquarium (flashing), swollen stomach, swollen eyes, clamped fins	See an exotic pet veterinarian
Fungal Infections	Decreased appetite, small sores on the skin and fins, white cottony growth on the skin, clamped fins	See an exotic pet veterinarian

BETTA FISH COMPATABILITY: Bettas make wonderful additions to community tank setups as long as only one male betta is added to the aquarium. Male bettas will fight and injure each other if kept together. One or more female bettas can be kept in the same tank as a male betta so long as they have hiding places available. Both male and female bettas get along very well with other non-betta fish. The following was taken from the “**Freshwater Fish**” care sheet to provide more information on betta-friendly community fish:

Peaceful/Community Fish: This group of fish can easily be mixed together without any aggression or predation problems. This group of fish includes some of the hardiest and most easily kept fish, allowing you to keep groups of them in a smaller space than larger growing fish. Examples of these fish include: livebearers (mollies, platys, and guppies), small growing barbs, most tetras (schooling), rasboras (schooling), danios (schooling), white cloud mountain minnows (schooling), killifish, small growing catfish species such as corydoras (schooling) or hoplosternum catfish, algae eaters such as bristle nosed plecostomus or otocinclus catfish (avoid the common plecostomus as they grow very large and do not eat much algae once mature), certain dwarf cichlids such dwarf gouramis, and of course: bettas.

*Fish marked “(schooling)” should be kept in groups of at least 5 to 6 individuals. Keeping these fish by themselves causes stress and an increased susceptibility to diseases.

REMEMBER: Bettas require warmth, light, and filtration just like any other tropical fish. While they may survive in a bowl with no supplemental heat or filtration, this is not humane unless water changes are done AT LEAST once weekly and the bowl is kept in a room that never goes below 74 degrees Fahrenheit. No Exceptions!