

Tropical Freshwater Fish

How to care for killifish

Killifish are a diverse group of quite small but very colourful fish. There are many different species families but one of the biggest is *Rivulidae*. They originate from Africa, Asia and North and South America. The majority of those in the aquarium trade are captive bred. They are generally small, peaceful fish and will not appreciate boisterous tank mates, and they will do best in soft water.



Water requirements

The water parameters for killifish are suggested below. The parameters are a general guide for this group of fish, so it is important to check with your OATA retailer for any species-specific requirements before purchasing.

Temperature:	between 22-27°C
pH:	6.0-7.5
Ammonia:	Zero mg per litre
Nitrite:	Zero mg per litre
Nitrate:	Not to exceed 20 mg per litre above normal tap water levels
General hardness:	Soft-medium (4-12°dH)
Carbonate hardness:	Soft-medium (3-10°dkH)

Biology

Due to their global distribution, there are many species of killifish, but only a few regularly make it into the trade.

Most killifish species are generally small (approximately 6cm), but larger species such as panchax will grow up to 10cm.

Killifish live in small pools of water in the wild, which may occasionally dry up. This means that some species are not particularly long-lived and are unlikely to live for over 2 years.

Killifish do require some companionship and it is suggested that at least three are kept together (two females to each male) to reduce stress on females or other tank inhabitants. More can be kept together providing they are added in this ratio.

Generally, male killifish will be far more colourful and have much more developed finnage than females.



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Aquarium requirements

As a general rule, you should within reason, buy an aquarium as big as possible. Ideally, it should be able to accommodate at least three killifish. It is recommended that an aquarium of at least 40 litres is used for a small group of the smallest species and at least a 90 litre aquarium for a group of the larger species (over 7cm). The larger the aquarium, the more stable the environmental conditions such as temperature and water quality will be. Whatever the size, **a filter is always essential.**

The tank should also have aquarium gravel or sand and ideally be heavily planted with live plants to provide cover, especially if multiple males are being kept together. If live plants are not used, then the addition of plastic plants and suitable ornaments is recommended, such as plant pots or model caves, which provides the fish with shelter. An aquarium cover is essential as these fish can jump if startled. The larger species will need plenty of open space in which to swim, but the smaller species will appreciate more plant growth and a gentle water current.

A heater is required to maintain a suitable temperature all year round. To minimise fluctuations in water temperature, the aquarium should not be situated near any draughts or heat sources. It should also be out of direct sunlight and away from loud noises, vibrations and sudden movements. Overhead tank lighting is recommended to maintain a correct day-night cycle.

Water testing kits are essential so that water quality can be checked on a regular basis (once a week) to ensure it does not slip below the water requirements stated above.

Introducing your fish

Before adding any fish, seek advice from your OATA retailer to make sure that your aquarium is an appropriate size for the number of killifish you would like to keep. Check that the water quality in your aquarium is suitable i.e. levels of ammonia and nitrite are zero. Only increase the number of fish you have in your aquarium slowly as the population of beneficial bacteria established when maturing your aquarium filter need to increase every time more fish are added and feeding increases. Overstocking or stocking your aquarium too quickly can result in 'new tank syndrome'. This occurs when there are not enough nitrifying bacteria to cope with the increased waste from the fish, leading to unhealthy levels of ammonia and nitrite, which may cause fish to become ill or die.

Healthy fish have clear bright eyes, undamaged fins, intact scales, no ulcerations or bumps, appropriate swimming behaviour and steady breathing. Do not purchase a seemingly healthy fish if sickly fish are present in the tank with it. Signs of disease can include clamped fins, flicking against gravel or décor and shimmying (shaking). Diseases



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can be easily carried by fish that do not show any clinical signs. If in doubt, ask your OATA retailer for advice as they will have in-depth knowledge and experience.

Your OATA retailer will usually sell your fish to you in a plastic bag. Try not to keep them in this for too long. Once purchased, take your new fish home as quickly as possible because fish are easily stressed by bright lights, extreme temperatures, noise and movement.

Once home, your fish will need to acclimatise to their new environment and a common method of doing this is known as the 'floating bag' method. Switch off the aquarium lights and take the bag containing your new fish out of its outer wrappings carefully, avoiding exposure to bright light. Float the bag in the water of your tank to ensure the temperature in the bag is the same as the aquarium water. After 10 minutes, slowly introduce small amounts of aquarium water into the bag containing the fish for up to 20 minutes. Once complete, carefully release the fish into the aquarium whilst introducing as little bag water into the aquarium as possible. After this, dispose of the bag and any excess water appropriately. Monitor your new fish carefully for the first week, paying particular attention to water quality. If in doubt, contact your OATA retailer for advice.

Maintenance

At least once every week, a partial water change of 25% is strongly recommended (a siphon device is useful to remove solid waste from the gravel). The water should be tested regularly (at least once per week) to ensure that ammonia and nitrites don't build up. Ensure that the replacement water is treated with tap water conditioner to remove any harmful chlorine or chloramine present before adding to the aquarium.

Filters should be checked for blockages. If the filter needs cleaning, do not run it under the tap because any chlorine or chloramine present may kill the beneficial bacterial population that has established in the media. Instead, it should be rinsed lightly in the tank water which is removed during a partial water change as this reduces the amount of bacteria which are lost.

Good husbandry is essential as killifish can be stressed by even the smallest amounts of ammonia and nitrite which may then cause them to develop various diseases. Test the water to monitor the ammonia, nitrite and nitrate levels, together with pH and water hardness every week, especially during initial set-up and after adding extra fish.

What to watch out for

All fish will have slight variations in their behaviour or appearance, but keeping an eye on any changes in the following will help to identify any potential problems before they become a real health issue:

- ▶ swimming behaviour – hanging at the surface, sitting on the bottom or erratic swimming



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- colour – turning a darker or paler colour than normal
- temperament – changes in level of aggression or hiding more than normal
- breathing – gill covers moving at a slower or faster rate than normal
- appearance – development of white spots or fluffy growths, loss of fins or scales
- condition – increase or decrease in body weight and condition
- feeding – reduced intake or lack of interest in food

If you are concerned about the health of any of your livestock, then test your water quality and contact your OATA retailer for further guidance.

Feeding

Killifish are omnivorous and will take most food types. In the home aquarium, they should be fed with a good quality flake or granule. They will also benefit from being fed small items of live or frozen food such as daphnia, brine shrimp or tubifex.

Killifish should only be fed what they can eat within a few minutes, once a day. Take care not to overfeed as this can lead to a build-up of uneaten food which breaks down releasing toxic waste into the water. If in doubt, ask your OATA retailer for advice on appropriate feeding levels.

Compatibility

Some killifish species will do best in a species-specific aquarium as they can be shy and prone to being bullied by other fish. Others can be kept in community aquariums if they are not kept with any other long-finned species as some males may be aggressive towards them. It is also important to consider the size of tank mates as some species (particularly the golden panchax) may have large mouths and are capable of eating smaller species.

Breeding

Most species can breed in the home aquarium to some degree. Some species will require a soft substrate such as peat in which to bury their eggs, which can then be removed and even stored dry, before they are then hatched. Other species will scatter eggs into vegetation or spawning mops, which can then be transferred to another aquarium for hatching. In either case, a dedicated set-up with specialised fry foods will result in best success.

Checklist

Before purchase make sure:

1. You have the appropriate equipment and position for the aquarium.
2. You have researched all the species in which you are interested and your final choices are all compatible.
3. You are familiar with how to transport and release your fish.



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4. You are aware of the daily, weekly and monthly maintenance your aquarium will require.
5. You are prepared to look after your fish properly for the duration of their life.

Shopping List

- ▶ Glass or acrylic aquarium
- ▶ Filter*
- ▶ Heater
- ▶ Lighting (required for live plants)*
- ▶ Gravel or sand
- ▶ Tap water conditioner/dechlorinator
- ▶ Water testing kits (ideally ammonia, nitrite, nitrate, pH and water hardness)
- ▶ Gravel cleaner/siphon cleaning device (recommended)
- ▶ Aquarium decorations and/or live plants
- ▶ Bucket for water changes

*may be included in branded aquarium sets but can be purchased separately.

Before purchase make sure:

- ▶ The aquarium is of a suitable size that ideally can accommodate the fish once they are fully grown
- ▶ Water parameters are as advised in this leaflet.
- ▶ Aquarium is cycled and ready to receive fish.

Always buy...

test kits and regularly check the water for ammonia, nitrite, nitrate and pH. This will allow you to make sure the water in your aquarium is not causing welfare problems for your killifish.

Maintain...

the water in the aquarium within the accepted parameters highlighted above. You may need to do regular water changes to achieve this.

Never siphon by mouth...

A fish tank can harbour bacteria which can be harmful if swallowed. Buy a specially

Establish a routine...

for testing the water in your aquarium. Record your results to enable you to identify fluctuations quickly. Also check the temperature of the water.

Always wash your hands...

making sure to rinse off all soap residues, before putting them into your aquarium, or use long sleeved rubber gloves. Wash your hands again afterwards and certainly before eating, drinking or smoking.



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designed aquarium gravel cleaner which can be started or primed without the need to place the siphon in your mouth

Five Welfare Needs Checklist:

The Animal Welfare Act 2006 states that all pet owners have a legal duty of care to their pets. Anyone who is cruel to an animal or is found not to be providing the five animal welfare needs, as listed below, can be prosecuted.

- ▶ A **suitable environment** e.g. appropriately sized tank (with water heater if tropical set up) within a suitable location in your home.
- ▶ A **suitable diet** which meets the needs of your chosen fish.
- ▶ **Behaviour** - Fish are able to exhibit their normal behaviour e.g. hiding places for timid fish, enough room for fish to swim freely.
- ▶ **Companionship** - Ensure you know whether your chosen fish need to be kept with, or apart from, other fish.
- ▶ **Health** - Protected from pain, injury, suffering & disease e.g. you are aware of the daily, weekly and monthly maintenance that your aquarium will need.

- ▶ **Water quality test kits are a necessity not an optional extra**
- ▶ **You must be prepared to look after your fish properly for the duration of their life and provide an aquarium which can accommodate your fish when fully grown**



*Never release your aquarium animals or plants into the wild

It is illegal and for most fish species this will lead to an untimely and possibly lingering death. Any animals or plants that do survive might be harmful to our native countryside. Take care to properly dispose of any soiled substrate (e.g. sand or gravel) or decorations so that non-native organisms do not enter natural watercourses.

Visit ornamentalfish.org to find a full range of how to guides and species-specific care sheets to help you look after your fish successfully.



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