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Factors Affecting the Life of Aquarium Fish.

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Abstract: This article describes the impact of external environmental factors on the growth and development of aquarium fish, literature information on the physical and chemical properties of water. Low water temperatures have a negative effect on fish, causing peripheral blood vessel constriction, decreased breathing, and glycolysis as a result of impaired substance metabolism, and then the development of autolysis processinig, as well as the death of fish slowly.

Key words: aquarium, fish, physico-chemical properties of water, gas in water, salt, thermal conditions, oxygen, toxicity, ph.

Introduction.

With a number of its physical properties, water, the habitat of fish, has different effects on the morphology and ecology of fish. The water is denser than the air, its specific gravity is close to the specific gravity of the fish, the fish does not drown in the water, lives in a lifelong hangover, can move freely. In addition to the specific gravity of the fish, a float bubble also helps when living in a hanging state. In fish that do not have a swim bladder, such as a shark, swimmers perform this function. The properties of water narrowing from heat and being relieved and expanded from cold and not compressive are also important factors and are of great importance for the life of all organisms living in the same environment, including fish.

Aquatic creatures such as terrestrial creatures, including fish, cannot live without the oxygen that plants produce. Oxygen plays a large role in all processes, such as growth, urination, wintering, digestion, respiration, while passing through the blood to the body of animals and ensuring the metabolism. The abundance of dissolved oxygen in the water depends on factors such as the temperature of the water. Oxygen is about 20 times less in water than in air. Chemically clean water and mountain waters are high in oxygen, in other words, a small amount of dissolved oxygen depends on how cold and salty the water is. In nature, however, all waters contain more or less salt, consequently, there is no water itself that is too rich in oxygen. Fish are animals adapted to this little oxygen environment exchange.

With confidence, it can be said that in most cases, the reasons for the illness and death of fish are the aquarium enthusiasts themselves. In 99% of cases, the disease will be caused precisely by their own fault. One of the main reasons for this is the temperature of the water. The temperature is too high or

vice versa low. Or if they do not keep the water temperature uniform certain playing will negatively affect most aquarium fish.

While most aquarium fish are species from a tropical climate, some of them withstand a decrease in water temperature, for some even 25 degrees is considered a very low temperature. Therefore, it will be necessary to adjust the temperature of the aquarium water depending on which species of fish are kept and maintain it uniformly.

The fact that the water temperature is playing is not so much a problem in our Central Asian region, because the changes in the weather in our region compared to the northern regions will not be so drastic. Still, it is important to pay attention to the fact that the temperature of the water in the aquarium is maintained uniformly. All fish, except for fish with slightly elevated water temperatures (discus, some scalaria and black), feel good in water with a temperature of 24-26 degrees. Therefore, it is necessary to maintain the water temperature in the range of these indicators and not allow its sharp changes, especially those that take place up to 3-5 degrees. So it turns out that the disease and death of fish can be caused by the cooling of the water or by sudden changes in temperature or, if not, exceeding the temperature.

In some cases, they will perish or get sick until they go shopping for fish and take them home. After all, the purchased fish is picked up by most amateurs in containers or packages that are small in size. In such containers, it is quite natural that the water temperature warms up much during the summer, and in winter it cools down. Therefore, it is recommended to take fish in a special thermos. At the very least, the cellophane package must be folded in two layers, with a tight mouth, and it is necessary to deliver the fish to the destination in as short a time as possible. If you do this, the temperature of the water will change to 1-2 degrees and the fish will not be harmed in any way.

When the water temperature exceeds, the fish move as if disturbed, their color becomes abnormally woven, and they begin to swallow air with their mouths floating near the surface of the water. In such a situation, a little cool (not cold) water is poured into the aquarium and the temperature is normalized. At the same time, air spraying into the water is organized using a compressor.

Usually an increase in water temperature to 35 degrees Celsius and then its gradual decrease does not cause harm to most fish. But if the water temperature exceeds 35 degrees Celsius, it is not for nothing that the fish die. Therefore, it is necessary to control the water temperature using a thermometer, especially in seasons when the weather changes dramatically.

A gradual change in water temperature over a certain period of time (within a few hours) to 5-7 degrees may not cause damage, but a sharp (within 1-2 minutes) change to 3-5 degrees will negatively affect the fish, which can even numb and lead to death.

To avoid such situations, it is necessary to follow the following steps:

1. to reduce the effect of temperature changes during the day, special heaters are installed in aquariums that keep the water temperature uniform, and the average temperature indicator is set at 25 degrees (discs and other warm water are set to 28 degrees for hush-sighted fish).
2. when transferring fish from one container to another, the temperature of the water in both containers should be the same or may differ by 1-2 degrees.

Now, as for the decrease in water temperature, this is very risky for most aquarium fish, after all, they live in warm water in a tropical climate. Most species of aquarium fish suffer from various diseases precisely in the autumn and winter seasons. In these seasons, there is a decrease in the temperature in the environment, and at the same time in the temperature of the aquarium water. To do this, it is advisable

to use a special heater that keeps the water temperature uniform. The decrease in water temperature is very dangerous for goldfish and its species, all aquarium fish except for some clammy fish. For these fish, it is considered that unfavorable conditions arise when the water temperature drops below 23 degrees.

Under these conditions, the fish become sedentary, their food intake decreases, and their color becomes dull. Most importantly in such conditions, they will be able to suffer from various infectious diseases. Diseases caused by this situation are also called colds by aquarists.

In reality, however, fish are exposed to a variety of gribooks, invasions, and viruses. The treatment of these diseases is very difficult and troubling, in most cases it is a long-lasting work.

To avoid these, we recommend using the following steps:

a) do not let the water temperature drop by 25 degrees

b) when cleaning the aquarium and pouring fresh water into it, the temperature of the new water should be at least 1 degree higher.

For almost all types of aquarium fish, in addition to labyrinth fish, it is required to enrich the water with air (or rather oxygen) using a compressor. The smaller the size of the aquarium or the greater the number of fish inside it, the higher the air spray power of the copmressor should be.

Another reason why amateur aquarists may find their fish dead is because they do not supply enough oxygen to the aquarium water. As mentioned earlier, oxygen delivery to the aquarium should continue continuously day and night. Otherwise, as a result of the lack of oxygen, the pupae can perish. Especially if a small aquarium contains a large number of fish (for example, a flock of barbus in a 50-liter aquarium begins to notice a shortage of oxygen after half an hour).

How to identify symptoms of oxygen deficiency (anoxia)?

The main sign of this is that all fish in the Aquarium often swallow air with their mouths, floating close to the surface of the water. It is at this moment that, as a result of frequent air absorption, the victims of fish are damaged by Burns, irreversible processes begin in the body. It should be remembered that during feeding, when the water temperature increases, and at night, the need for oxygen increases even more. When the aquarium is full of plants, late-night oxygen deprivation is greatly increased, whereas late-night plants also require oxygen.

To prevent oxygen deficiency, follow the following:

- first, it is necessary that the spraying of air into the water with the help of a compressor lasts day and night, when it is not very, use the compressor at night;

- secondly, do not overdo the number of fish in the aquarium;

- the third is to partially renew the water once a week;

- it is advisable if you use a turbine filter that can perform the compressor function;

- adjust the flow of water protruding from the filter so that it flows from the surface of the water to ensure that the waters inside the aquarium circulate. If you do this, the water in the surface layer, which is filled with oxygen, will also supply oxygen to the lower layers as a result of circulation.

Another problem with oxygen mixed in water is that its amount increases. Such a phenomenon can occur in aquariums full of plants, as a result of increased lighting and aeration, or when more than of fresh and oxygen-rich water is poured during water renewal. This can also damage the fish. Excess

oxygen causes gas bubbles to appear in the fish's blood and causes embolism. As a result, they perish. Therefore, it is good that everything is in moderation, and the oxygen content in water is also in moderation.

CONCLUSION

1. A gradual change in water temperature over a certain period of time (within a few hours) to 5-7 degrees may not cause damage, but a sharp (within 1-2 minutes) change to 3-5 degrees will negatively affect the fish, which can even numb and lead to death. To avoid such situations, it is necessary to follow the following steps:

a. to reduce the effect of temperature changes during the day, special heaters are installed in aquariums that keep the water temperature uniform, and the average temperature indicator is set at 25 degrees (discs and other warm water are set to 28 degrees for hush-sighted fish).

b. when transferring fish from one container to another, the temperature of the water in both containers should be the same or may differ by 1-2 degrees.

2. Most species of aquarium fish suffer from various diseases precisely in the autumn and winter seasons. In these seasons, there is a decrease in the temperature in the environment, and at the same time in the temperature of the aquarium water. To do this, it is advisable to use a special heater that keeps the water temperature uniform. The decrease in water temperature is very dangerous for goldfish and its species, all aquarium fish except for some clammy fish. For these fish, it is considered that unfavorable conditions arise when the water temperature drops below 23 degrees.

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