

A fast-moving piezoelectric micro-robot fish with twin tail fins

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Description

Fish anomalies include changes that are apparent when looking outside (outside) or inside (inner) of the fish. External abnormalities include growths, lesions, scars, abnormal scale patterns, body color changes, and physical deformities such as curvature of the spine and blindness. Examples of internal abnormalities include changes in the liver, intestines, reproductive organs, and the presence of parasites. Some anomalies are due to natural causes, while others are caused by human activity. Cut off part of the fin with scissors. Of all the marking techniques, this is the most popular, the easiest to perform, and the recovery is uncommon in many situations. Reproduction is faster and more complete in young fish than in older fish. Cut off the pectoral or pelvic fins at the base, or remove the upper and lower caudal fin lobes with scissors. Among the various fins, the pelvic fin is usually selected for fin cutting. Tail damage can affect a fish's agility, and fins with well-defined behavioral roles such as the dorsal and anal fins should not be used for these purposes. Fish are cold-blooded animals. That is, the body temperature is close to the ambient temperature and fluctuates. Also, all bodily processes are greatly affected by water temperature. Very cold or pressurized water can become supersaturated with dissolved gases. These gases can expand rapidly if the temperature rises sharply or the pressure drops. If the fish are already exposed to this supersaturated water, the gas they take in during breathing can also expand rapidly, releasing the gas into their bloodstream. This is called bubble disease, and the tiny air bubbles that form can cause significant tissue damage and death. Pond fish bubble disease can be caused by the owner using a hose to fill the outdoor pond with well water. When the hose is submerged, the incoming water gases remain dissolved in the water, which can cause problems. To prevent this, incoming water can be aerated by spraying it from above when it hits the tank or basin. Excess ammonia in your system is extremely harmful to fish. High levels of ammonia in your aquarium can be caused by

several factors. Two syndromes characterized by very high levels of ammonia are well described. The first, called new tank syndrome is a simple build-up of ammonia that occurs when fish are placed in a new tank before the biological filter is fully operational. This syndrome usually occurs within 1 week-3 weeks after setting up a new system. This situation can be managed with frequent water testing. If the total ammonia content is high (more than 2 mg/l) at least 50% of the water in the aquarium should be replaced. This intensive management is only required for 1 week-2 weeks unless there are other unidentified issues with the system. Water quality monitoring shows a decrease in ammonia followed by an increase in nitrite as bacterial colonies grow. If your nitrite levels are back to normal as well, the process is complete. Carbon dioxide can be toxic to fish at concentrations above 12 mg/l. Fish exposed to high levels of carbon dioxide appear lethargic and unresponsive. Water is often acidic in pH tests. Treatment is powerful aeration that blows excess carbon dioxide out of the water and into the atmosphere. As the carbon dioxide concentration in water decreases, the pH of the water increases.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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