Prevent Aquarium Emergencies Through Testing

Drs. Foster & Smith Educational Staff

Routine aquarium testing is often regarded as a static endeavor. Tests are performed and results are checked. If results fall within an acceptable range, hobbyists are satisfied and proceed to the next task at hand. This method of aquarium testing is excellent at capturing a single moment but provides an incomplete picture of a dynamic process. Learn how to maximize test result data and apply them to prevent potential aquarium emergencies.

Why is testing pH important?

A. Maintaining proper pH is vital for the health of your aquarium inhabitants. However, stable pH levels also serve as a general indicator of aquarium water quality. For example, a drop in pH may suggest excess organic pollutants within the system.

Record Test Results

Documentation is the first step in creating a window into your aquatic system. Use a calendar or notebook to record the date, time of day, and the type of test(s) performed on your aquarium. Think of it as a journal or diary for your aquarium. Write down any notable events that occurred when you performed the test. For example, the use of any supplements or medications, new aquarium additions, maintenance, etc should be documented.

Organize Accumulated Data

As you record your test results, it is beneficial to organize the information in a logical manner. For example, results from ammonia, nitrite, and nitrate tests can be grouped together, while pH and alkalinity form another logical grouping, and so forth. It will be easier to interpret the test results when information is organized into related groups. To take data organization a step further, consider plotting the information into graph form. Designate the X-axis as the date and the Y-axis as the value of the test result.

A healthy and stable aquarium environment should demonstrate very little fluctuation. The average value of each test establishes a reference point, or the norm, for that particular water parameter. Deviation from this norm indicates the occurrence of an event that may affect the overall health of your aquarium.

Sample pH chart for an African Cichlid Aquarium

pH									
8.6									
8.4									
8.2	✔	✔	✔	✔	✔				
8.0						✔	✔		
7.8								✔	✔
date	8/1	8/8	8/15	8/22	8/29	9/5	9/12	9/19	9/26

A drop in aquarium pH beginning on 9/5 suggests the need

Interpret Test Results

Whenever you have a test result that falls outside of the established norm, look for correlating information documented in your journal. There might be vital information that may help determine what caused the change in water parameter. Before taking any corrective measures, it is crucial to find out the root cause of the change. Without this information, it's difficult to know what steps are needed.

> for filter or aquarium maintenance to reduce organic waste buildup that can acidify and lower aquarium pH. It may also suggest the need for a water change and the application of a buffering agent to help increase pH.

Long-term Improvement

For example, let's say your record shows the brief presence of nitrite the same week you performed a water change. A water conditioner will provide immediate relief, but for a long-term solution, it may be prudent to re-examine your maintenance routine. Perhaps the water change is too large or aquarium gravel is being over-cleaned. Adjust your maintenance regimen to see if it is affecting biological filtration and, therefore, causing an increase in nitrite levels. By applying information gathered through routine testing, you will be able to make better decisions to help reduce the potential of unexpected emergencies.