



**UNDERSTAND  
WATER  
QUALITY  
PROBLEMS**

**5 common causes  
of water problems**

**pH IS TOO HIGH**

**What causes it?**

May be caused by tapwater with a high pH, alkaline gravel and decor, limestone rocks in the water or cement.

**How to correct it**

If the tapwater is not the cause of the problem and has a lower pH, undertake partial water changes to gradually reduce the pH. 0.1 units every day is fine for most fish, but sensitive species may require a more gradual change.

Remember to remove the offending item

that is causing the high pH. If you are unsure, get two clean containers and add some tapwater. Measure the pH and add a reasonable quantity of gravel or the decor to one of the containers. Measure the pH in both containers after 3–4 days. They should be identical — if there is any difference it will be due to whatever item is the culprit.

If the tapwater is the cause of the problem consider using RO water, adding a pH adjuster, or keeping fish that can survive in your local conditions.

**pH IS TOO LOW**

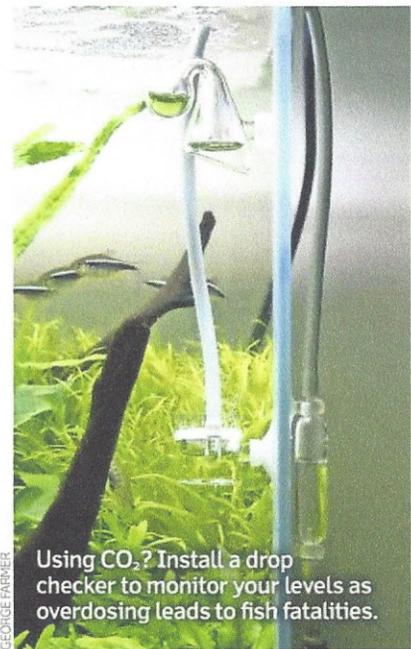
**What causes it?**

Usually due to tapwater or decomposing organic material. If you live in a soft water area, the tapwater may be naturally soft and slightly acidic. Water supply companies may add buffers to the water to temporarily raise the pH (so it doesn't eat away at old metallic pipework), but these can stop working after a day or so allowing the water to slowly return to its natural, more acidic condition.

**How to correct it**

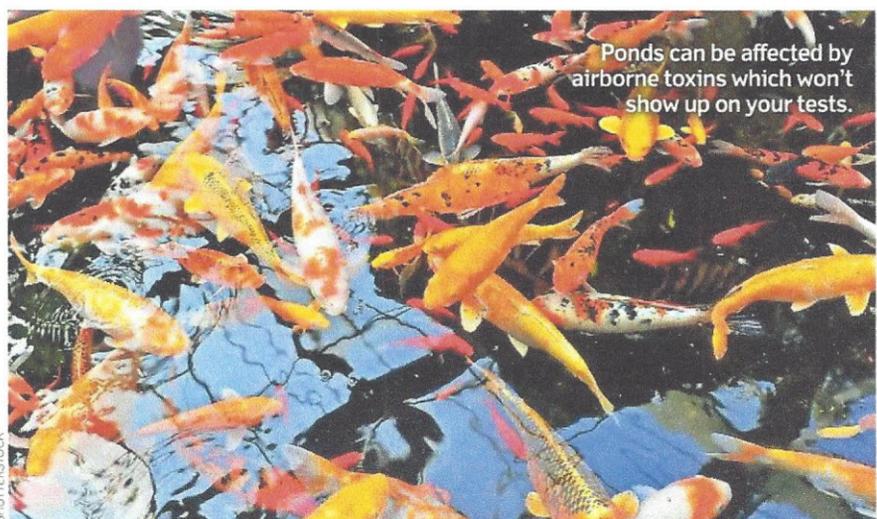
Using pH adjusters and buffers will help to correct the issue, but make sure that all future tapwater is adjusted before it is added to the aquarium. Again, keeping soft acidic water species may be an alternative solution.

Organic material naturally releases acids as it decomposes (through the nitrogen cycle). If the water is very soft it can result in the pH lowering. Good aquarium or pond maintenance and the use of buffers will help to overcome the issue.



GEORGE FARMER

Using CO<sub>2</sub>? Install a drop checker to monitor your levels as overdosing leads to fish fatalities.



SHUTTERSTOCK

Ponds can be affected by airborne toxins which won't show up on your tests.



ALAMY

## AMMONIA AND NITRITE PROBLEMS

Both should be close to zero in a healthy aquarium or pond. High levels suggest there are not enough bacteria in the filter and aquarium or pond to decompose the fish waste and organic material (leaves, food, dead fish etc.) present.

### What causes it?

There are a range of causes of elevated ammonia and nitrite levels including:

- Newly set up aquarium or pond
- Newly set up filter
- Overstocking with fish
- Adding too many fish at one time
- Insufficient or faulty filtration
- Biological filter medium cleaned excessively or in tapwater
- Overfeeding
- Poor tank hygiene
- Excess debris in the water.

### How to correct it

Control measures include an immediate partial water change and removal of any excess debris followed by daily partial changes until the ammonia/nitrite is back to safe levels. Chemical additives can also be used to reduce ammonia and nitrite levels.

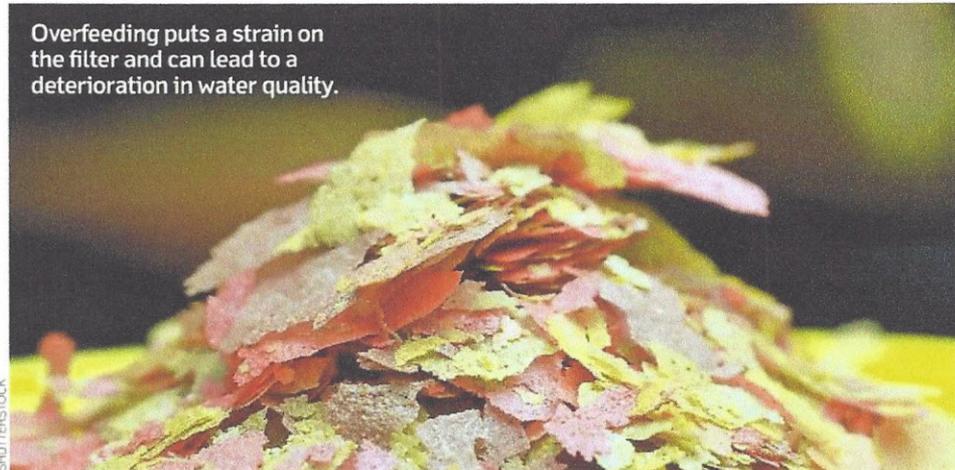
In addition, the cause of the problem needs to be identified. Avoid overfeeding and overstocking, ensure the filter is functioning effectively and don't clean the media with anything that will harm the helpful bacteria.

Adding lots of fish at once — even small ones — can lead to elevated ammonia or nitrite levels.



ALAMY

Overfeeding puts a strain on the filter and can lead to a deterioration in water quality.



SHUTTERSTOCK

## HIGH NITRATE PROBLEMS

### What causes it?

High levels of nitrate are likely to occur in an aquarium or pond through the tapwater in some areas of the country, or naturally as the end result of the nitrogen cycle.

### How to correct it

If the tapwater contains high levels of nitrate, using RO water (for aquaria) either exclusively or to dilute the tapwater will help. Alternatively, commercial products are available that will remove nitrate. The natural production of nitrate can be controlled by encouraging healthy plant or algae growth, and by minimising the production of nitrate by removing organic material before it starts to decompose, avoiding overfeeding and taking care not to overstock.

## CHLORINE/CHLORAMINE IN TAPWATER

### What causes it?

Raised levels of chlorine and chloramine may be present in tapwater as it is added to control living organisms and ensure the water is 'safe' for us to drink.

### How to correct it

Tapwater can be made safe to use for fish and other aquatic organisms by leaving it to stand for 1–2 days with agitation (aeration or filtration). Alternatively, good quality tapwater conditioners (also known as dechlorinators) can be used to quickly remove both chlorine and chloramine before the water is added to the aquarium or pond.

### Unidentified water quality problems

Sometimes a sudden fish health problem points to a water quality issue, but even after testing and working out what has happened in the few days before it became noticeable, it is still difficult to identify exactly what has caused the problem. Here I would suggest that you check your

tapwater, to ensure there is nothing obviously wrong with it, and then conduct a 25% partial water change, removing any debris from the aquarium or pond. Treat the new tapwater with a conditioner that includes colloids as these will coat the skin and gills of the fish providing extra

protection from whatever is affecting the fish. Repeat this every 1–2 days for a week. Whilst doing this, remain alert and check with anyone who has been in the vicinity of the pond or aquarium to see if they have any ideas of what could have caused the issue.

PFK