

04. The Filter — a System of Life

Told by: Professor Nitra

"The filter is not 'for making the water look nice'. The filter is the most important biological system in the entire building and I am deeply — DEEPLY — tired of being taken for granted. I convert toxic ammonia into nitrite. My colleagues convert nitrite into nitrate. We do this every minute of every day. We have been doing it for four years and six months. Nobody has ever said thank you." — Professor Nitra, from inside the filter housing, with feeling

A filter does three jobs. First, it moves water. Second, it traps physical waste. Third — and most importantly — it is home to colonies of beneficial bacteria that break down the toxic ammonia that fish produce. Without those bacteria, ammonia builds up fast. With them, ammonia is converted step by step into much less dangerous compounds. This is called the nitrogen cycle, and it is the invisible engine that keeps a tank alive.

The bacteria live in the sponge and filter media. They need water flowing through them to survive, and they need time to grow. A new tank has no bacteria yet — they take weeks to establish.

This is why filter cleaning must be done carefully. Never wash filter sponges under tap water — the chlorine kills the bacteria instantly. Rinse them gently in old tank water instead. Remove some of the dirt, but keep the biology alive.

⚠ Never rinse filter sponges under tap water. The chlorine kills the good bacteria. Use old water from the tank instead.

Yechiel's Rule: The filter keeps the fish alive. Keep the filter alive. Treat the bacteria well.