How do I get rid of nitrates and phosphates?

Marine · https://shirleyaquatics.co.uk/knowledge/how-do-i-get-rid-of-nitrates-and-phosphates/

Could nitrate & phosphate problems be a thing of the past?

NP reducing biopellets

Revolutionary!

NP reducing biopellets are the perfect way to control nitrates and Phosphates in a marine aquarium. They have a unique mode of action which means they can be used in most forms of filtration including canister filters and fluidized reactors. They are very economical compared to other forms of nitrate and phosphate removal. You will need around 50 to 200ml of biopellets for every 100 litres of water (your system requirements will depending on feeding levels and its current efficiency, in some extreme cases you may need up to 400ml per 100 litres) but the best part is that it will be six months before you need to replace any!

NP-reducing BioPellets are consumed by bacteria, which is why new pellets need to be added every 6-12 months to compensate for digested filter media.

The science bit:

The positive effects of NP-reducing BioPellets on water quality are based on the principle of immobilization. Waste products from the water, mainly nitrate and phosphate, are converted into bacteria. This keeps the aquarium water clean. The new formula NP-reducing BioPellets are composed of 100 % pure biologically degradable polymers that can be placed in a fluidized filter or filter canister. The pellets will allow aerobic growth of bacteria which consequently will consume nitrate and phosphate simultaneously. The bacteria will use up the carbon from the BioPellets, whilst nitrogen and phosphorus are taken from the water as nitrate and (ortho)phosphate. This conversion of organic BioPellets (together with inorganic nitrogen and phosphorus) into microbial biomass is called immobilization. In addition, anaerobic layers will develop, resulting in additional denitrification.

The surplus of bacteria will be consumed by filter and suspension feeding organisms such as sponges and corals, or skimmed off by a protein skimmer.

Added bonuses:

- NP-reducing BioPellets stimulate local growth of bacteria in a filter compartment, instead of all over in the aquarium where they may clog up pipes and hoses.
- They prevent the growth of cyanobacteria (slime algae), as the bacteria growing on NP-reducing BioPellets will compete with these phototrophic nuisance microbes.
- They consist of a higher molecular mass than most competing products resulting in a longer filter retention time and thus requires less frequent replenishment.
- Certified free of toxins by two independent laboratories
- You can’t overdose!
- Will act quickly on nitrates and phosphates. You will see a drop in levels after two weeks.
- Nitrates can potentially be dropped from over 50ppm to near zero in under 6 weeks

Use them wisely

We suggest placing the outlet of the pellet filter in front of a protein skimmer, to limit the amount of bacteria entering the system. This has the additional benefit of increased gas exchange. The pellets should never be used without sufficient aeration, as this may lead to low oxygen and pH levels, especially during night time. Proper aeration can be established with air pumps and protein skimmers.

The NP-reducing BioPellets will allow more feeding and thus more livestock, however, when heavy feeding is required, it is recommended to combine the pellets with standard phosphate adsorbents. The reason for this is that most aquarium feeds contain higher levels of phosphate than is consumed by bacteria, fish and invertebrates, when compared to nitrogen.

Getting the best out of these babies:

Maintain sufficient water flow through the BioPellets, to prevent production of hydrogen sulphide gas. The use of ozone and UV will negatively affect bacterial recruitment of the BioPellets and increase the maturation time of the filter. In addition, bacteria which are released from the pellet filter and are not skimmed off before they are released in the main tank. They could release their nitrogen and phosphate rich content as a result of bacterial cell death, thus reducing the effectiveness of the

pellets. UV, Ozone, sponges or any other systems that will block or inhibit the rapid skimming of bacteria can have this effect.

If your nitrates are above 20ppm always introduce the pellets slowly to avoid a bacterial bloom (seen as cloudy water) We would suggest introducing 25% of your total dose every 4-7 days, if you get cloudy water then do not does until the cloudiness subsides.

Better than the rest:

The success of NP Reducing BioPellets hasn't gone unnoticed by others. The product gained some competitors which confirms all the positive aspects. However, most of these competitors claim that they sell the same pellets or that they come from the same manufacturer. Some even copied our text from the website word for word. The NP Reducing BioPellets are unique, be careful putting imitations into your aquarium

Recently, we obtained samples from different competitors and had them analysed. In addition, we collected data sheets from some manufacturers. The outcome was surprising, some pellets appeared to contain toxic fillers like anti-oxidants which, at high enough dose, could be toxic to aquatic life such as fish, corals and even algae. These toxins will not be released in the water instantly when you introduce these pellets to your system, but will slowly accumulate as a result of pellet degradation by bacteria and toxin stability in water.