Phytoplankton, fundamental food or fad?

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Phytoplankton... Food or fad?

Many people are aware that in the recent history of marine keeping there have been a number of products that have been the in thing one moment and then despised the next. Methods of filtration seem to be at the front line of this battle. Should you filter naturally, or remove everything then add back what you need? There is no end of choices to be made.
One relatively new concept in the marine hobby is the addition of phytoplankton or green water, I'm sure this seems a notion alien to most pond keepers as all their efforts are devoted to getting rid of green water!

What is Phytoplankton?
The ocean waters that cover over 70% of the earth's surface contain over 5000 species of tiny floating or swimming single celled organisms known as phytoplankton. These single celled algaes can only be seen in extremely high densities, colouring the water shades of green red or brown, or individually with a microscope.

What does phytoplankton do in nature?
Collectively phytoplankton has been modifying the earth's atmosphere for more than 2.7 billion years (Buick, 1992) and forms the basis for most marine food chains. After harnessing the suns energy, they are preyed upon by zooplankton, corals, sponges, fish, mammals and more. As a result of this nearly all life in the sea is reliant upon phytoplankton and would not survive in its absence.

Phytoplankton… a small cell with big boots to fill!
Phytoplankton are mostly alone in their ability to synthesize a small number of essential nutrients including a group of omega fatty acids. Even humans are unable to synthesize omega fatty acids in large enough quantities to maintain health. Oily fish such as herring are extremely good for us as they are packed with these fatty acids, it is no surprise that these fish are filter feeders and actively use phytoplankton as an important nutritional source. Scientists have found these fatty acids to be vital in the development of the central nervous system and that a diet that does not contain them can

lead to the following symptoms (in fish!):

- Easily frightened, resulting in stress and even death
- Poor vision
- Lowered immune response
- Degradation of fins
- Limited growth rates
- Increased susceptibility to disease especially when being transported

Pretty important stuff!

Introducing Phytoplankton

Unless you have a completely sterile aquarium, then there will be some microscopic life in there, not just the bacteria in your filter but some phytoplankton and some zooplankton. Introducing phytoplankton kick starts a massive chain reaction that benefits your aquarium as an ecosystem. Each cell is essentially an algae and functions as all other algaes do, using light to grow absorbing nutrients in the process. The main difference is, that this algae is a vital source of nutrients for animals higher up the food chain and not something to be scraped away with an algae cleaner.

Water quality

Live phytoplankton, unlike other preserved invertebrate foods, will not reduce your water quality (unless heavily over fed!). Far from it! Phytoplankton will absorb nitrates phosphates and Iron, improving your water quality. Introducing phytoplankton along with new living rock has been proven to speed up the curing process dramatically, resulting in live rock with a great deal more life!

Feeding

Phytoplankton directly feeds soft corals, sponges, tubeworms, some hard corals, clams, scallops and rotifers. Rotifers are zooplankton, which in turn feeds many hard corals, shrimp and even fish larvae. Fish will then feed healthily on the tiny shrimp that will thrive in this plankton rich environment.

Starting off

You can either buy phytoplankton or grow your own. We sell live phytoplankton from Variconaqua, a company that guarantees the highest cell concentrations. Turning your protein skimmer off is not necessary when using live phytoplankton unlike other coral feeds. The phytoplankton must be kept in the fridge at all times and has a shelf life of only three weeks. This is not generally a problem as Variconaqua have counted the phytoplankton levels in the red sea (sounds like a good job to me!)

and the levels are staggeringly high. To attain the same level you need to put up to 20ml per litre of aquarium water in every day. However, if you have ever seen the red sea, it is a coral garden jam packed with filter feeders so start off slowly. We would recommend 1ml per 4 litre for the first two weeks and then 1 ml per 2 litres after that, depending on your stocking density.

Introducing phytoplankton is not an exact science or a miracle cure, but the benefits will be seen over a number of weeks and all your aquariums inhabitants will benefit because of it.