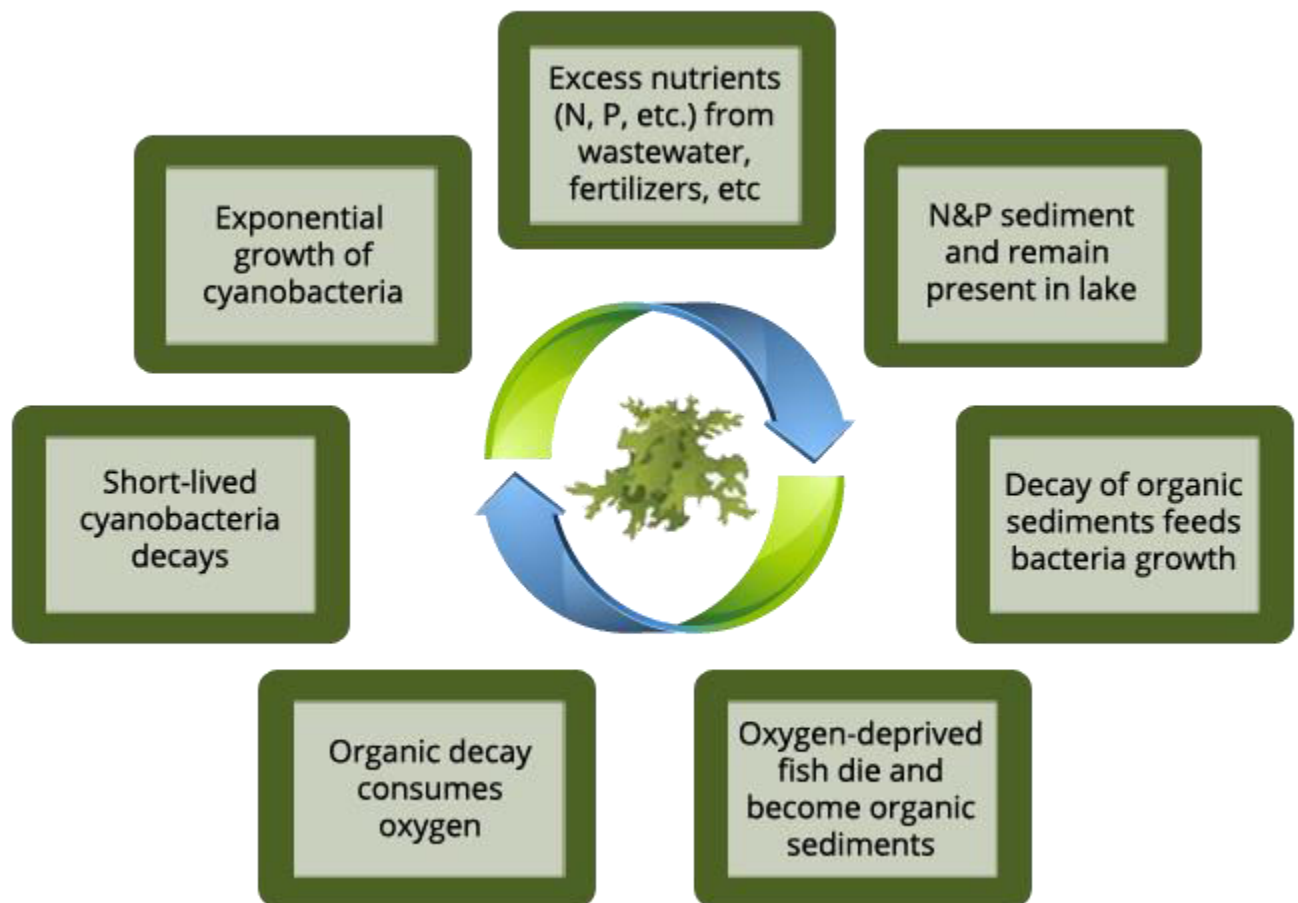


People make a big deal about planting trees, growing Diatoms in lakes and oceans is more beneficial and easier too, if Nano Scale Nutrient is used!

The vicious circle of Eutrophication



Eutrophication is the enrichment of an ecosystem with chemical nutrients, typically compounds containing nitrogen, phosphorus, or both. Eutrophication can be a natural process in lakes, occurring as they age through geological time.

Nano Scale Nutrient is a silica based micronutrient mix packed in 1 liter bottles.

Nano Silica and 10 micro nutrients – Iron, Zinc, Manganese, Boron, Molybdenum, etc.

- It can be used in any natural water body like – Aquariums, Aquaculture Ponds, Lakes, Rivers, Estuaries, and Coastal Waters and for Sewage in Sewage / Wastewater treatment plants.
- It causes the diatoms present in the water to grow rapidly.
- Generally water bodies contain more of nutrients, N and P, and less of micro nutrients, since metals are not stable in water. So by providing the missing micro nutrients, diatom growth is enhanced.
Diatoms have a silica body, unlike other algae such as Green Algae and Blue Green Algae which have cellulose bodies.
- Diatoms are consumed by zooplankton and these by fishes, unlike Blue Green Algae which are not good food for zooplankton and fish. Lesser quantity of Diatoms dies and decomposes in the water compared to Blue Green Algae. Decomposition results in release of CO₂ by bacteria.
- Dead Diatoms sink and do not float, so they do not form a layer on top of the water, unlike other algae that form a layer on top of the water and thus cutoff light and reduce photosynthesis.

- The Silica shells of the Diatoms too do not decompose; millions of tons of fossilized Diatomaceous Earth from various points of time is available all over Earth and is used in many products like toothpaste, water filters, pet food, as a pesticide in granaries, cosmetics like Multani Mitti, Dynamite, etc.
- “Because of their abundance in marine plankton, especially in nutrient-rich areas of the world’s oceans, diatoms probably account for as much as 20% of global photosynthetic fixation of carbon (~ 20 Pg carbon fixed per year: Mann 1999), which is more than all the world’s tropical rainforests.” [Click here to find out more about Diatoms from David G. Mann ...](#)
- Sewage Treatment – removed nutrients, N and P, and provides Oxygen.
- Lake, River, estuary and coastal water remediation – removes nutrients – N and P, increases dissolved oxygen level, reduces harmful bacteria, reduces mosquitoes in polluted lakes, reduces harmful algal blooms, red tides, mass fish kills, dead zones in coastal waters,
- Increases fish catch in lakes,
- Helps keep aquaculture ponds clean and well oxygenated, prevents harmful algal blooms, reduces ammonia accumulation, and provides natural live feed to fish.
- Diatom Algae are a source of bio-fuel.
- Production of Omega-3 dietary health supplements

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beneficial and easier too, if Nano Scale Nutrient is used!

- 1 liter of Nano Scale Nutrient causes growth of at least 200 kgs of Diatoms.
- 1 liter of Nano Scale Nutrient results in release of at least 200 kgs of Oxygen.
- 1 liter of Nano Scale Nutrient results in consumption of at least 275 kgs of Carbon dioxide.
- 1 liter of Nano Scale Nutrient results in consumption of at least 80 kgs of Nitrogen.
- 1 liter of Nano Scale Nutrient results in consumption of at least 10 kgs of Phosphate.

Hydrogen Sulfide is emitted by anaerobic bacteria in sewage treatment plants, septic tanks, polluted lakes, etc. Nano Scale Nutrient and Diatoms create aerobic conditions and this stops the emission of Hydrogen Sulfide.

Methane is emitted by methanogen bacteria in Sewage Treatment Plants, Septic Tanks, polluted lakes, flooded paddy fields, etc. Diatoms increase the Dissolved Oxygen level of water in every nook and corner of the tanks and thereby convert anaerobic conditions to Aerobic conditions. This will reduce Methane emissions. Methane is consumed by methanotroph bacteria; aerobic conditions promote growth of methanotrophs.

In nature Diatoms and Zooplankton provide 50 to 75% of the food for finfish and crustaceans in aquaculture ponds, lakes, rivers and oceans.

1 liter of Nano Scale Nutrient is to be used in about 1-2 million liters of raw sewage everyday and in 2 to 10 acre of lakes once a week.

- Using Nano Scale Nutrient as micronutrient mixture we are able to increase the growth rate of diatom strains tested (n=10) in comparison with other reported mediums.
- Nano Scale Nutrient also increased the EPA content in diatom *Cylindrotheca fusiformis*.
- Nano Scale Nutrient in combination with urea as N source increased the lipid content in *Cylindrotheca fusiformis* and *Cylindrotheca clostridium*.

The normal dosage is 1 liter Everyday per 1 to 2 million liters of sewage.

The deciding factor is the Nitrogen and Phosphate content of sewage:

- 1 person excretes 4.5 grams of N and 0.8 grams of P per day (EU Avg), in urine.
- 1 person uses 100 to 200 liters of water per day – toilet, bathing, kitchen, etc.
- So 10,000 people produce 1 to 2 million liters of sewage per day, with about 45 kgs of N and 8 kgs of P.

Hence, 1 liter of Nano Scale Nutrient is required to remove 80 kgs of N and 11 kgs of P, so perhaps 500 or 750 ml would be adequate, but 1 liter is a better estimate.

Dosage in flowing water would be based on the N and P level of the water, in the ratio mentioned above – 1 liter for 80 kgs of N and 11 kgs of P. Water flow does not really impact Diatom growth but the result would be seen downstream, far from the spot where Nano Scale Nutrient is dosed.

Not really. Depth is not an issue. Diatoms move up and down the water column. They come up in the morning and take in sunlight and nutrients and start photosynthesis and then they sink up to 100 meters and float up the

next day. The lipids / oil in the diatom is used to regulate buoyancy. So Nano Scale Nutrient will be available to the diatoms in the top few meters of the water.

**For More Details Or Supply of Nano Scale Nutrient
Contact:-**



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