



**BioBoost Nest**™  
Where Bacteria Loves to Live

## Working in Tandem

### Understanding the Role of Beneficial Bacteria in Water Remediation with BioBoost Nest

The BioBoost Nest provides an ideal habitat for beneficial bacteria, enabling them to build a thriving population. This is the cornerstone of the BioBoost Nest's usefulness in water remediation: it works in tandem with healthy bacteria.

The proliferating bacteria competes with algae to feed on excess nutrient in the water body. When the excess nutrient is diminished, algae growth is reduced, along with other water problems like foul odor and dying fish.

However, every pond is different. It is important to have a greater understanding of bacteria life-cycling, nutrient loading and the specific environments in which certain types of bacteria thrive.

### **BACTERIA LIFE-CYCLING**

Once a pond is inoculated with any type of bacteria, it will immediately begin to feed on whatever nutrient is present in the water column. As it begins to feed on the nutrient load, the pond will start to achieve greater clarity, foul odors will dissipate, and green events, such as algae blooms, will lessen. Overall water remediation goals will likely appear to have been achieved in a couple of months' time.

However, as the bacteria catches up to and gets ahead of the nutrient load, it will naturally reach the end of its life cycle. When bacteria die, they go through a process known as lysis. Lysis occurs when a cell has absorbed an excess of water and/or nutrients, therefore causing it to burst and release the nutrients it previously absorbed back into the water body.

When excess nutrients are released back into the pond, a green event may occur. The nutrients released back into the water column will already begin to be absorbed by algae and other undesirable inhabitants. These nutrients will likely consist of carbon, nitrogen, and phosphate. A new source of nutrients, coupled with sunlight and carbon dioxide, will result in the regrowth of algae and other unwanted species.

## TYPES OF BACTERIA

It may be important to consider a different type of bacteria application when lysis occurs. Photosynthetic bacteria may provide better results due to its ability to survive off of sunlight and not just available nutrients. Photosynthetic bacteria will perform life cycle processes of nutrient uptake and absorb sunlight in a way that mirrors algae and other aquatic plants. Through a combination of denitrification and an ability to function via photosynthesis, this specific type of bacteria absorbs food that would normally become available to algae.

## CONSIDERING THE INITIAL NUTRIENT LOAD


It is important to consider the nutrient load that has been previously established before introducing a remediation plan. For example, a pond with a littoral shelf most likely has an abundance of aquatic plants and weeds growing that catch excess nutrients, such as nitrogen and phosphorus, before they are introduced into the water body. However, the shallow water just past the bank is exposed to sunlight and likely has very little water movement. Heat from the sunlight and an abundance of nutrients may create issues that even a comprehensive water remediation plan, such as aeration plus beneficial microbe applications, cannot fix overnight.

When an excessive nutrient load has accumulated, the remediation process may require a bit of trial and error. A little patience and a remediation plan robust enough to tackle the previously existing nutrient load will be necessary in achieving the desired results.

## IN CONCLUSION

The BioBoost Nest works hand in hand with the bacteria it nurtures. Like any living organisms, bacteria have multi-faceted life processes that can affect overall performance in addressing water remediation concerns.

***Call or email us to learn more—we look forward  
to answering your questions.***

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