Bacta-Pur®

Lake Health Management & Restoration © 2010

ECOPROBIOTICS®, of the Bacta-Pur® System, are beneficial communities of natural bacteria, which have been on earth for millions of years and have been selected for their synergistic ability to biodegrade pollutants and to improve water quality. ECOPROBIOTICS® increase biodiversity. Just as people take probiotic yogurt for its' ability to assure the presence of the optimal community for digestion and immunity, ECOPROBIOTICS® improve ecosystem health. EVERY PRODUCTION of Bacta-Pur® products is analyzed and cleared for shipment ONLY after passing all performance tests and being CERTIFIED PATHOGEN FREE using techniques from the food industry. ECOPROBIOTICS® are purely natural and beneficial; they NEVER contain added chemicals such as surfactants, emulsifiers or enzymes…, nor do they contain genetically modified (GMO) or deliberately mutated organisms. ECOPROBIOTICS® are safe and beneficial. Disease causing organisms are never used, as others do or permit. All bacterial cultures in the Bacta-Pur® product are listed on the Canadian DSL.

Summary

SYMPTOMS	TREATMENT BENEFITS
• excessive green water or filamentous algae	• reduce soluble phosphorous
• proliferation of aquatic weeds	• channel nutrients to faunal food web
• fish gasping for air	• facilitate lake oxygenation
• cloudy water	• clarify water
• bad odors coming from lake	• eliminate causes of noxious odors
• excess sludge accumulating on lake bottom	• biologically digest organic deposits
	• convert wastes into natural fish food

Causes of Poor Water Quality

There are two kinds of aquatic pollution: insoluble and soluble. Lakes accumulate solids from dead plants and animal wastes. Soluble pollutants, from fertilizers, erosion and septage, add phosphorus and nitrogen — nutrients for algae and weeds. The plants convert, by photosynthesis, inorganic carbon dioxide into organic material. Dead plants form organic sludge, the accumulation of which results in oxygen depletion and release of noxious pollutants such as ammonia and hydrogen sulfide. Phosphorus is also liberated for reuse by plants. Oxygen can be reduced to levels causing fish kills. The stress caused by poor water quality also reduces fish growth and makes them more susceptible to diseases.

Natural water quality improvement is largely dependent on teams of beneficial microorganisms. One group starts a process, which is continued by others. It has been shown in scientific research that, even in natural lakes, essential members of these microbial teams are not always present.

This explains, in part, the natural aging of lakes and the too often observed phenomenon of proliferation of algae and weeds. Regular use of ECOPROBIOTICS® assures the presence of an optimal microbial community to improve water quality.

Benefits of ECOPROBIOTICS®

The ECOPROBIOTICS® added to your lake digest both the solid and soluble pollution. The water clearing microorganisms in ECOPROBIOTICS® use these wastes as foods for their growth. Excess soluble phosphorus is the principal cause of excess algae and weeds. The scientific literature shows that bacteria can take up nutrients faster and grow more rapidly than algae and aquatic weeds; this results less phosphorus being available for algae and weeds. The by-products

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of this natural water clearing process are water, carbon dioxide and bacterial biomass, which is rich in protein. In a lake with fish or invertebrates such as snails or crayfish there is very little accumulation of bacteria, because the animals eat the microbial biomass. Thus, pollutants are transformed by ECOPROBIOTICS® into beneficial invertebrates and fishes while reducing soluble phosphorous, which is the major cause of excessive amounts of algae and aquatic weeds.

Treatment with the ECOPROBIOTICS®:

Lake health management or restoration starts by carefully defining specific biological and physico-chemical parameters within your lake. Ask your authorized Bacta-Pur® representative to provide you with the Bacta-Pur® Lake Health Evaluation questionnaire (brochure q02), which is designed to provide information on the condition of your lake as well as the treatment goals. If you require assistance in completing the form we can provide you with technical advice. This information will allow us to plan the best and most cost-effective treatment for your lake. The general dose rate is about 1 ppm of Bacta-Pur® LAKE based on lake volume. The dose rate can be doubled for the first three weeks to accelerate the start-up of the enhanced biological processes.

Bacta-Pur® LAKE contains a complex mixture of beneficial microbes specifically designed to address multiple pollutional issues of lakes. It is no longer required to use multiple products to treat a lake. Depending on the treatment goal, Bacta-Pur® LAKE can be preactivated, with different activators to achieve specific goals. Bacta-Pur® ACTIVATOR GS, to optimize sludge digest or with Bacta-Pur® PRECONDITIONER N if reducing toxic ammonia is the goal.

Sludge removal: Bacta-Pur® LAKE can be preactivated for 24 hours; Bacta-Pur® ACTIVATOR GS. Following this process the Bacta-Pur® should be diluted* 10-100 times with lake water. Ask for site-specific advice.

Water clarification: Bacta-Pur® LAKE can be preactivated for 24 hours; Bacta-Pur® PRECONDITIONER N. Following this process the Bacta-Pur® should be diluted* 10-100 times with lake water and then sprayed onto the lake surface.

*The dilution is important to assure an even application across the water body.

NOTES:

- The recommended treatment for your lake will be provided upon receipt of the completed questionnaire Lake Health Evaluation (brochure q02).
- It is important, in lake health management, to assure the continual presence of oxygen at the sediment-water interface for the survival of the bottom dwelling higher life forms such as invertebrates and fishes. Bottom mounted air diffusers are a most cost-effective means to assure a well oxygenated lake. Contact IET-Aquaresearch Ltd. or an authorized representative for guidance on the choice of aeration equipment.
- Please see brochure tsd03 for the necessary physico-chemical parameters.
- **Bacta-Pur® LAKE is available in formats appropriate for lakes: 200 L (55 gal) barrels and 1000 L (264 gal us) totes.**

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