

FREQUENTLY ASKED QUESTIONS about Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK & Bacta-Pur® Sludgebusters ©2007

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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 yogurt for its' probiotic 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

1. **Q:** Other products may claim to be the same or as good as Bacta-Pur®. Why is Bacta-Pur® better?
A: Bacta-Pur® bioaugmentation products are purely biological. Unlike others, it contains no added chemical products such as emulsifiers, surfactants or toxic sulfide (rotten egg or sewer gas smell). Bacta-Pur® products are produced in large positively pressurized growth tanks.
 Opportunistic pathogens such as *Pseudomonas aeruginosa*, *Bacillus cereus* or coliforms are NEVER used in Bacta-Pur® products as others do. Bacta-Pur® products NEVER contain genetically engineered nor deliberately mutated bacteria, as others do.
 EVERY production of Bacta-Pur® bioaugmentation products is analyzed and cleared for shipment ONLY after passing all performance tests and being CERTIFIED PATHOGEN FREE using techniques from the food industry. Bacta-Pur® products are even approved or accepted for use in food transformation plants (NSF in the US and Canadian Food Inspection Agency).
 Bacta-Pur® products not only perform for you, they are safe for you, your family, your pets, your fishes. Using Bacta-Pur® improves environmental quality and helps Mother Nature.

2. **Q:** What time of the year should I be using Bacta-Pur® products?
A: This depends on where you live. Bacta-Pur® products should be used as long as there is no ice cover on your pond and particularly as long as you are feeding your fishes.

3. **Q:** Where do I add Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK and Bacta-Pur® Sludgebusters?
A: Bacta-Pur® KLEAR and Bacta-Pur® NUTRIPAK should be added directly in the filter. If there is no filter, Bacta-Pur® KLEAR and Bacta-Pur® NUTRIPAK, should be added directly into the pond, near the aerators, if any. Bacta-Pur® Sludgebusters



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should be added directly into the pond.

4. **Q:** How often do I use Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK & Bacta-Pur® Sludgebusters?
A: Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK & Bacta-Pur® Sludgebusters should be added weekly, as indicated on the label. There is no need to add any, during the winter months, if there is ice cover. Bacta-Pur® products do work in cold weather but more slowly. Bacta-Pur® products are used in lobster tanks and to control ammonia in lagoons – even under the ice.
5. **Q:** Can Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK & Bacta-Pur® Sludgebusters harm the fishes or other life in the pond?
A: **Absolutely not!!** Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK & Bacta-Pur® Sludgebusters are beneficial to fishes and invertebrates, just follow the instructions.
6. **Q:** I've added the products but the ammonia is not coming down or the water stays green -why?
A: There are several conditions to verify:
 - Are you overfeeding the fish or is there fertilizer runoff into the pond? Overfeeding is the most common cause of problems. You are not trying to produce tonnage but rather just keep your fish healthy. Daily feeding is not necessary; three times a week in small amounts is usually more than enough. Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters convert wastes into natural and beneficial food for goldfish and koi. If the body, of a fish, is wider than its head, as viewed from above, the fish are not starving; they are well fed! Don't love your fish to death!!
 - Check pH; the ideal pH is 7.0 - 8.5 but is acceptable as low as 6.5 or up to 8.8. Outside of these limits, the activity of nitrifying bacteria is reduced.
 - Check carbonate/bicarbonate alkalinity (measured in mg/L CaCO₃); it should be above 100 mg/L.
 - Is the biological filter working properly? Check the flow rate through the system and make sure that the filter media is not in need of cleaning.
 - Are you using Bacta-Pur® NUTRIPAK as indicated? Beneficial bacteria require trace elements, just as people do.
7. **Q:** Will Bacta-Pur® KLEAR clear green water?
A: Yes, as its name implies. Bacta-Pur® KLEAR contains no algacide nor other poison; Bacta-Pur® KLEAR does not kill algae. The scientific literature shows appropriate bacteria can capture nutrients faster than algae reducing nutrient availability. This is a natural process not a chemical one, natural processes are slower but safer and may take up to about a week.
8. **Q:** How do I know Bacta-Pur® is working?
A: There will be greater visibility in the pond, and there will be improved water quality, which can be monitored, with test kits, in terms ammonia, nitrite, and nitrate. Sludge



accumulations will also decrease.

9. **Q:** Will Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters help reduce diseases of fishes?
A: Bacta-Pur® products are not medication, but regular use of Bacta-Pur® KLEAR helps maintain good water quality and reduces stress on the fishes (ammonia and nitrite cause stress), thereby making them more resistant to infection. In addition, regular use of Bacta-Pur® products protects the fish by the probiotic effect of assuring the presence of vastly greater numbers of beneficial microorganisms, which out number the pathogens. Keep the environment saturated with beneficial strains. Just as some people eat active yogurt cultures to assure their intestinal flora.
10. **Q:** How long does Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters last once the bottle is opened?
A: The bottle should be used within three months.
11. **Q:** Is it possible to over-dose with Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters?
A: No, but one should always follow instructions.
12. **Q:** Is it possible to under-dose with Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters?
A: Yes, one should always follow instructions.
13. **Q:** How do Bacta-Pur® KLEAR, Bacta-Pur® NUTRIPAK & Bacta-Pur® Sludgebusters work?
A: Regular use of Bacta-Pur® KLEAR assures the presence of a balanced community of beneficial bacteria, which improve water quality. The bacterial team in Bacta-Pur® KLEAR work synergistically to improve water quality by controlling ammonia, nitrite, and nitrate. The bacterial community also reduces nutrients, particularly soluble phosphorus. The beneficial community in Bacta-Pur® KLEAR also produces biopolymers, which help clarify water. The result is clearer and healthier water for your fishes.
 Bacta-Pur® Sludgebusters assures the presence of essential balanced community of bacteria— a balanced community of microorganisms to biodegrade organic wastes (sludge, fish waste *etc.*). Reduces the occurrence of oxygen deficient sludge and reduces causes of noxious odors (methane, hydrogen sulfide *etc.*). It will give your pond a cleaner bottom. Regular use facilitates oxygenation of water; this is particularly important in hot weather. You can not have a clean house with a dirty floor. Use Bacta-Pur® Sludgebusters to digest the sludge. Don't let sludge accumulate.
 Growth of the beneficial bacteria can be limited by lack of essential minerals in the water; these conditions can vary both geographically and seasonally depending on rain, snow - melt, water treatment systems *etc.* Regular use Bacta-Pur® NUTRIPAK assures the presence of essential minerals and trace elements, which may be lacking in your water. Think of Bacta-Pur® NUTRIPAK as a vitamin or mineral supplement



for the health of the water purifying community.

14. **Q:** Can I mix Bacta-Pur® with chemicals in the pond?
A: Some chemicals are harmful to bacteria. Read the instructions for the chemicals to find out. Never mix two products together, even if you use them at the same time.
15. **Q:** What time of the day should Bacta-Pur® KLEAR be added?
A: Bacta-Pur® KLEAR can be added at any time of the day, but to help clarify green water, additions should be made at the end of the day.
16. **Q:** How long before Bacta-Pur® KLEAR begins to work?
A: Bacta-Pur® KLEAR starts immediately to solubilize sludge and other processes start over the next hours as the beneficial bacteria come out of dormancy. Biological processes are slower than chemical poisons; positive results will be seen within a few days to a week, depending on conditions such as temperature, pH or aeration.
17. **Q:** Some users of Bacta-Pur® KLEAR have noted a rapid decrease in nitrite. How is this possible?
A: Bacta-Pur® KLEAR contains bacteria capable of converting and removing nitrite by not just one but two pathways: nitrite can be converted to nitrate by the nitrifiers and to nitrogen gas by the denitrifiers.
18. **Q:** Does Bacta-Pur® contain bacteria capable of nitrification and denitrification? If so how does one avoid partial denitrification?
A: Bacta-Pur® KLEAR contains bacteria, which are capable of nitrification and complete denitrification, which is the conversion of nitrate or nitrite into nitrogen gas. Partial denitrification is the conversion of nitrate into toxic nitrite. Not all bacteria are capable of complete denitrification, in fact, strains capable of incomplete denitrification are naturally more abundant than the desirable ones, which perform complete denitrification. Regular use of Bacta-Pur® KLEAR assures the presence and dominance of strains capable of complete denitrification.
19. **Q:** How does Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters solubilize protein?
A: Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters solubilize sludge and proteins by splitting the long chain molecules into smaller fractions such as amino acids, which are water soluble. Bacta-Pur® Sludgebusters also solubilize fats by converting them into fatty acids, which are also soluble in water. The solubilized sludge, protein and fats will then be converted, by the beneficial community in Bacta-Pur® KLEAR & Bacta-Pur® Sludgebusters, into bacterial biomass, carbon dioxide and water. The bacterial biomass is natural food for your fish and invertebrates. Converting pollutants into beneficial food is the natural way of maintaining pond health by converting pollutants into something useful to your pond community. Gold fish and koi suck gravel into their mouth to remove the bacterial floc, which is food, and then they spit out the cleaned gravel. Use of Bacta-Pur® converts wastes into natural and



beneficial food; this is what the food web is all about.

20. **Q:** What is the relationship between algae and bacteria? Why in some situations are there diatoms, filamentous algae or blue-green algae?

A: Nitrogen is considered the limiting factor for algal growth in salt water, while phosphorus is the limiting factor, in fresh water. Under optimal conditions, heterotrophic bacteria can double their population within 20 minutes; algae take about 24 hours. The bacteria also have a much greater surface area to volume ratio than algae. Greater surface area facilitates the uptake of nutrients. It is largely for these reasons that appropriate bacteria can remove soluble nutrients, which are needed by algae. The beneficial community in Bacta-Pur® KLEAR is particularly efficient at removing soluble phosphorus. Bacteria are rapidly preyed upon; this results in the nutrients being biotransformed into natural and beneficial food for the invertebrates and fishes in your pond. Regular additions of Bacta-Pur® KLEAR and Bacta-Pur® NUTRIPAK are essential for optimal benefits and water clarity. The nutrients taken into the bacteria are unavailable to the algae.

Diatoms have the special requirement of silica for their growth. Filamentous algae are favored in moving water. The attached filaments remain in position, whereas planktonic forms move down stream with the current. Blue-green algae can fix nitrogen from the air and also form air pockets, which makes them float at the surface. Blue-green algae often occur in polluted water, which is turbid. Their ability to float provides them with light in otherwise dark waters.

21. **Q:** What is the relation between light and bacteria?

A: Light is not only unnecessary for the growth of the beneficial bacteria, which improve water quality, but light can inhibit the growth of nitrifiers, particularly *Nitrobacter*. Biological filters should be kept in the dark. Ultraviolet light is used to kill bacteria. The toxicity of the ultraviolet light is a function of the wave length, intensity and duration of the exposure.



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