5 keys to unlocking Laboratory Studies

This report analyzes laboratory studies purporting to compare BioAugmentation with BioStimulation. Studies can be accurate or inaccurate, impartial or biased, honest or deceptive, straight shooting or misleading, enlightening or confusing. All too often, they are an infuriating mixture of several or all of the above.

How, then, do can you determine how much faith to put into any study?

It's not a simple question to answer. There are many variables to consider which often compromise even those studies conducted by prestigious universities and analytical labs. Below are five major points for comparison that should be looked at carefully when reading and analyzing any such study.

- **Point #1 - Pay careful attention to the abstract.** Read it several times to get it clear in your mind what claims the study is making. Then, rather than relying on the abstract for your sole knowledge of the study, read the entire study, carefully, looking specifically for those, facts, and figures that led to the conclusions touted in the abstract.

You'll often find that the abstract has either stated broad generalizations that the facts barely support, or has left out certain key stipulations and provisos, which, if added, would substantially weaken the conclusions that have been drawn.

- **Point #2 - Look at the contaminated medium being used.** Assure yourself that it doesn't give undo advantage to any of the processes or products being tested. For instance, if the medium is soil, is the soil indicative of a very broad range of soils (contaminated and not contaminated) or has the soil come from a historically heavily contaminated site, thus giving unfair advantage to BioStimulation. If this bias exists, is it at least acknowledged in the abstract?

- **Point #3 - Remember that the speed and efficiency of bioremediation boils down to a numbers game.** In the case of oil degradation, simply put, the more hydrocarbon degrading microorganisms present, the faster the process. With this in mind, study the concentrations (densities) of the microorganisms used. How many microorganisms per gram of product were available? What was the actual inoculum used? In order for any hyper degradation of oil to occur, there must be at least 1,000,000 hydrocarbon degrading microorganisms per gram of contaminated soil. Many BioAugmentation products are capable of delivering far more than that. Were they given full reign or were they diluted to a low inoculum-- the equivalent of tying ankle weights on a racehorse to slow it down, thus allowing plow horses to compete.

- **Point #4 - Examine the nutrients used, if any.** Many BioAugmentation products have been refined and designed to work with very specific blends of nutrients. Was each product tested used in conjunction with its specific nutrient package and applied as per exact company instructions or was a general blend of nutrients applied across the board., instead. Nutrient packages can differ dramatically and some (for instance those that are urea based) can have a very detrimental effect on the speed and efficiency with which the microorganisms degrade the target contaminant.

- **Point #5 - Was a biocatalyst used?** Certain BioAugmentation products (microbes or microbial blends) are applied in conjunction with a liquid biocatalyst which greatly enhances the speed with which they attack the target contaminant. This is often an integral part of the application process. Without the application of any specified biocatalyst, potential results are compromised.

Other areas of interest

- Gardening
- M.S.D.S
- Septic Tank Systems
- Technical Help


- What on earth is an oil-eating microbe?
- Bioremediation
- Hydrocarbons

AquaZyme -- **BioNutrients** -- **BioZome** -- **BioZorb** -- **Greasetrap Formula** -- **Mighty Mikey** -- **Oppenheimer Formula**

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