

Biological Agri Solutions



BIOENHANCEMENT

Aquaponics, Recirculating
Aquaculture and
Hydroponics Application




Green Stream
nutrients

Introductory Summary

30
YEARS

For the past thirty years BioCat has been applied to a wide range of biological processes.



The BioEnhancement solution was discovered and developed through a methodology to collect, culture, preserve and subsequently propagate a diverse biosystem of biostimulants that interact with a massive number of bacterial, archaeal, fungal and viral species.



Microbes have the capability to transfer genetic information horizontally by transduction through phage's. The BioEnhancement solution utilizes their diverse bio-system or "mother" and harvests the phage's from it.



This incredibly diverse solution of phage's is then applied to a microbiome. The resulting effect is that the microbiome is kickstarted not only with a diverse set of microbes but also "good" genes that "resets" and adjusts the biome to a healthy diverse system.



The microbiome then functions in a healthy manner because of the diversity and "injected" good genes.

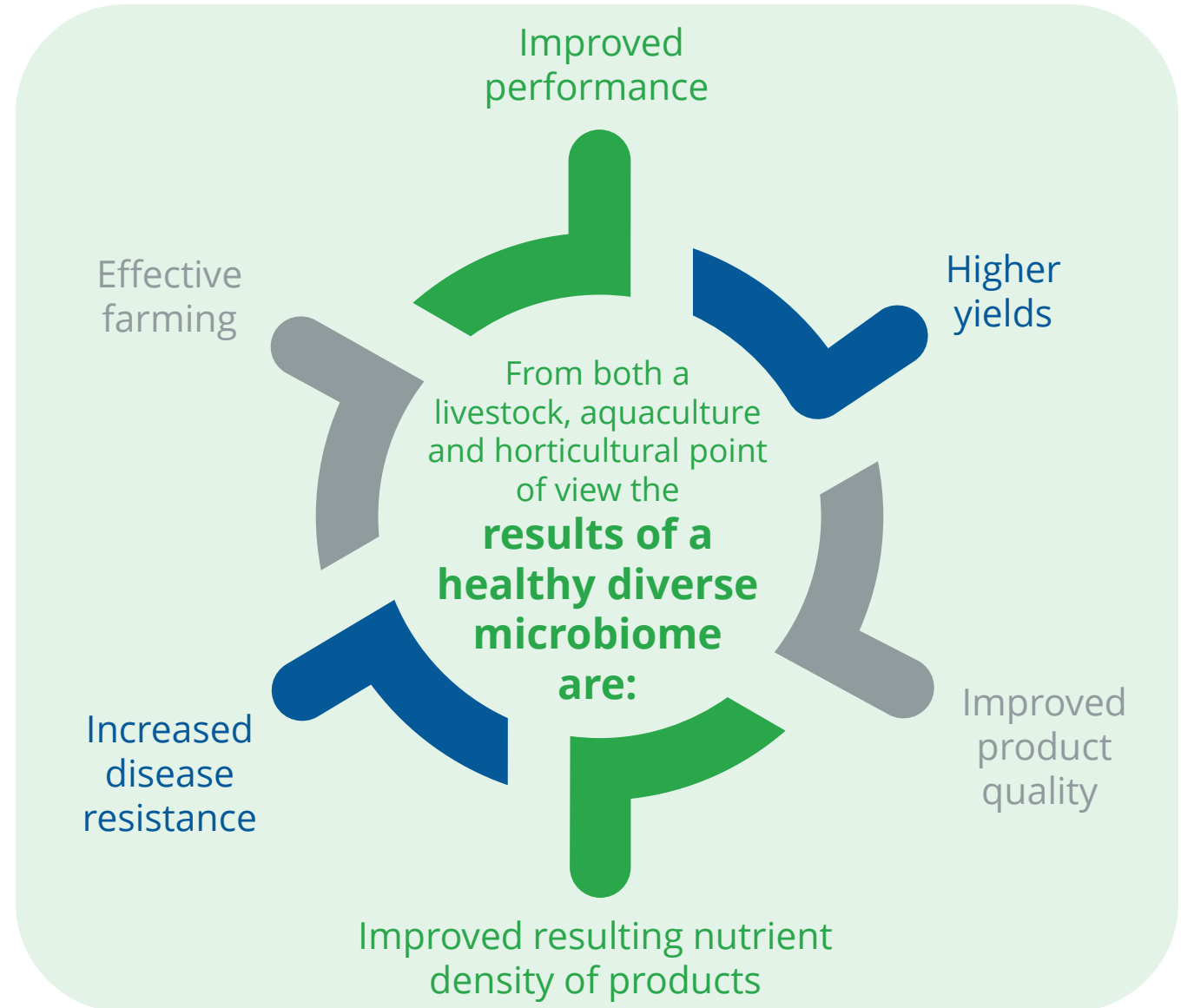
BioCat Enhancing the Microbial Community

The unique BioEnhancement biostimulant technology promotes the **natural biological control and enhancement** mechanisms inherent in all microbial biosystems. It is / has been applied to biosystems in the bioenergy, bioremediation, livestock, aquaculture, slurry and crop production industries.



Successful, effective and healthy livestock, aquaculture and horticultural production of any animal or crop is directly related to a healthy and diverse microbiome.

From conversion of macro and micro elements to more available chelates to the control of unwanted proliferation of microbes and their metabolites, a diverse microbiome is key to a healthy and good result.



Green Stream Nutrients & BioCat

Green Stream Nutrients Pty Ltd has partnered with BioEnhancement to represent BioCat within the Aquaponics, Recirculating Aquaculture and Hydroponics application spheres.



Key Advantages of the BioEnhancement Solution - Improving Microbial Diversity and Health



Greater initial root formation - Improved germination rates, Seedling transfer take rates



Enhanced root development leading to nutrient uptake optimization



Chelation of macro and micronutrients leading to reduced supplementation



Improved disease resistance



Biological / Organic amendment - No chemicals or harmful substances



Stabilization of pH



Improvement of water turbidity - Reduction of TSS



Establishment of beneficial microbial communities important for Ammonia, Nitrite and Nitrate stabilization and conversion



Reduction/removal of biofilm/slime - Anti bio-fouling mechanism



Reduction of sedimentation formation within DWC, NFT systems



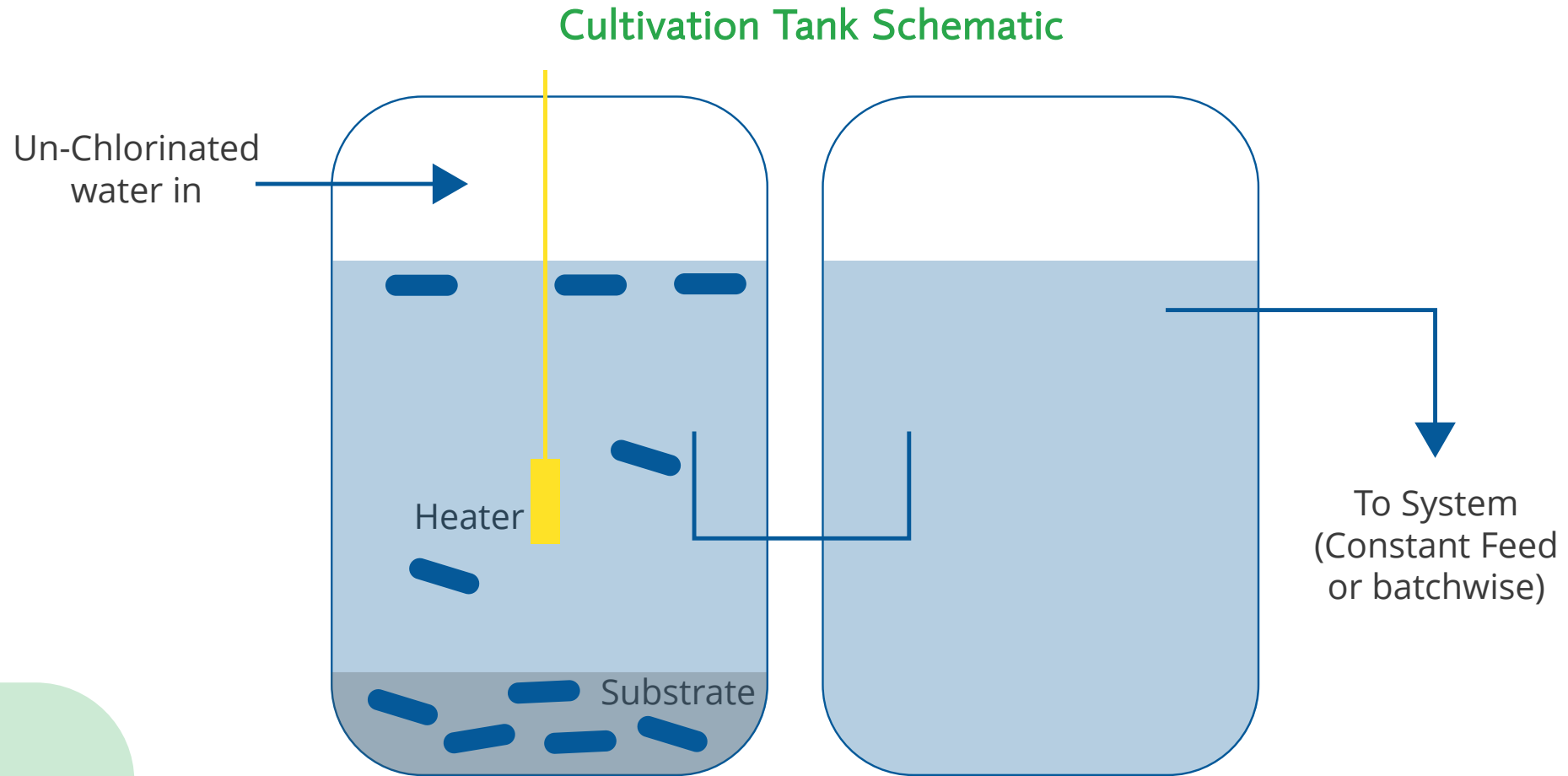
Improved production rates general health and nutrient density



Significant reduction in fish having an earthy/musty taste and odour. (Caused by Geosmin and Methyl-Isoborneol (2-MIB))



Dry Substrate General System Layout



General Information and Costs

Application rate of 1-1.5% total system nutrient/water volume per month

Dry Substrate with Cultivation Tank

Example of 100 000 lt system:

1 % x 100 000 lt
= 1000 lt per month

1 kg of Dry substrate
produces 6000 lt of
BioEnhancement solution

1 kg Dry substrate cost
excluding vat R4500.00

R4500.00/kg => 6000 lt

Using 1000 lt per month
=> 6 months

Resulting in R750 / month
for BioEnhancement
solution

Concentrate, x25 strength, available at R350 / lt



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