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Client: Satori Farms
Farm: Satori Farms
29-Jul-25

Bacteria and Fungi

Sample #	Sample ID	GDW	Active Bacteria (100-200µg)	Active Fungi (2 -10µg)	Total Bacteria (50 - 300µg)	Total Fungi (100 - 200µg)	Fungal Dia
Desired Range							
4025	B-1	0.91	1.97	0.00	238.30	14.51	2.5

Nutrient cycling or the mineralization of plant nutrients is dependent on metabolically active bacteria and fungi that convert nutrients from soil, fertilizers, compost, bokashi and soil amendments into an oxidized plant available form. For example, plants do not take up urea or ammonium. Urea or ammonium must be converted by Microbes into nitrate which is the form that plant roots can easily absorb.

Protozoa

Assay	Flagellates	Amoeba	Ciliates
Desired Range	10,000/gdw	10,000/gdw	50-70/ml
Sample # Sample ID			
4025 B-1	0	0	0

Protozoa are predators that feed on bacteria and sometimes fungi. The result of the predation is the availability of nutrients for both plants and soil microbes. The C:N ratio of protozoa is 3:1 to 10:1. The bacteria consumed by protozoa have too much nitrogen for the amount of carbon that protozoa need. The protozoa release the excess nitrogen in the form of ammonium. Bacteria take that ammonium and convert it into nitrate for plant roots.

There were no protozoa assessed in Bokashi. Bokashi moisture is at 10% which is low. Moisture is needed for bacterial activity and hence protozoa activity. While Protozoa component is low there is significant colony forming units of Free Living Nitrogen Fixing Bacteria that were assessed in Functional Group Analysis.

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Client: Satori Farms **7/29/2025**

Keystone Functional Group	**Effect on Plant Growth and Soil Functions**	**Desired Range in Soil** Colony Forming Units per gram	**Sample ID: #4025 Bokashi**
Endosporeforming Bacteria	Enhance nutrient and water uptake for plants; improve soil structure and reduces plant stress (salinity, heat and drought)	$1x10^3 – 1x10^7$	3.4×10^5
Free-living Nitrogen Fixing Bacteria	Converts atmospheric nitrogen into forms usable by plants, boosting growth and soil nitrogen levels	$1x10^6 – 1x10^7$	1.14×10^7
Heterotrophic Bacteria	Increase soil aeration, water infiltration, and organic matter decomposition, benefiting plant roots	$1x10^6 – 1x10^7$	3.8×10^{10}
Phosphorus Solubilizing Bacteria	Increase phosphorus uptake in plants, improving growth and soil nutrient availability	$1x10^3 – 1x10^6$	1.6×10^6
Psuedomonads (Fluorescent and Nonfluorescent)	Produces Siderophores for Iron chelation, Induced Systemic Responses for Disease Suppress, Mitigates plant stresses,	$1x10^3 – 1x10^6$	1×10^1 1×10^6
Cellulose Degrading Bacteria	Break down organic matter, recycling nutrients critical for plant health and fertile soil	Fluctuates with presence of plant residue and environment (4 diverse colony types)	3.1×10^7

Comments: Bokashi contains a diverse range and sufficient population that may help to improve plant and soil functions. While Bokashi is the result of fermentation primarily of *Lactobacilli* there are bioactives that *Lactobacilli produce that can encourage the growth of other bacteria found in the feedstock and media used.*