Trial of Penergetic-k Compost at Chaos Springs organic farm, Waihi

Trial date: Aug/Sept 2021

Summary: Penergetic-k Compost product was trialled on a compost pile alongside a control pile

Results:

- On-farm temperature profile + usual compost parameters: no significant difference between the piles.
- Physical assessment: Penergetic-treated pile was slightly drier.
- Official Soil Foodweb testing results summary:
    - Active & total Fungi = both significantly increased in the treated pile
    - Hyphal diameter = increased to above recommended range in treated pile (versus below range in control pile)
    - Active, actinobacteria & total bacteria = all increased in the treated pile
    - Organism biomass ratios = all increased for treated pile
    - Protozoa – Flagellates & Amoebae = doubled for the treated pile
    - Protozoa – Cilliates = slightly increased for the treated pile

Conclusion: Although physical assessments on-farm didn't show significant differences between the control pile and the Penergetic-k Compost treated pile, the Soil Foodweb official testing produced astounding differences. The results illustrate a significant improvement in the end compost result when treated with Penergetic-k Compost product.

Fungi levels went from 'normal' to 'good', and fungal biomass went from 'good' to 'excellent'. Both compost piles showed excellent protozoan numbers, with the treated pile being double that of the control pile- indicating good nutrient cycling potential.

penergetic
the natural biotechnology

CHAOS SPRINGS
SOIL DYNAMICS

Soil Foodweb Test Results:

Control pile

Compost Detail

Report prepared for:
Chaos Springs
Steve Erickson
131 Deam Road
Waihi, Waikato 0000

For interpretation of this report, please contact your local Soil Steward or the lab.

Report Sent: 22/09/2021
Sample #: 05-8160
Unique ID: 103
Plant: N/A
Season: N/A
Invoice Number: 26
Sample Received: 15/09/2021

Soil Foodweb NZ
107 Argelins Road
Hanmer Springs, North Canterbury 7334
02108214323
info@soilfoodweb.co.nz
http://www.soilfoodweb.co.nz

Assay Name	Result	Units	Range	Commentary
Organism Biomass Data				
Dry Weights	0.31	N/A	0.2 to 0.8	Within normal moisture levels for compost
Active Fungi	11.69	µ/g	> 3	Fungal activity within normal levels for compost.
Total Fungi	1611.88	µ/g	> 300	Good fungal biomass. - Fungal diversity appears at quite good levels.
Hyphal Diameter	2.25	µm	> 2.5	
Active Bacteria	143.14	µ/g	> 3	Bacterial activity at high levels for compost.
Total Bacteria	1254.11	µ/g	> 300	Good bacterial biomass.
Actinobacteria	149.06	µ/g	< 20	
Organism Biomass Ratios				
TF:TB	1.29		0.01 to 10	Balanced fungal and bacterial biomass. Suitable for most crops including pasture, kiwifruit and avocado.
AF:TF	0.01		< 0.1	Fungal component mature ie less than 10%
AB:TB	0.11		< 0.1	Not quite mature. Wait to apply this material until activity drops below 0.10.
AF:AB	0.08		0.01 to 10	Fungal dominated, becoming more bacterial.
Protozoa (Protists)				
Flagellates	44078.51	#/g	> 10000	Excellent protozoan numbers indicating good nutrient cycling potential. High ciliate numbers indicate possible anaerobic conditions occuring during composting process.
Amoebae	88157.02	#/g	> 10000	
Ciliates	1354.50	#/g	< 1322	
Nitrogen Cycling Potential	224+	kg/ha		Nitrogen levels dependent on plant needs. Estimated availability over a 3 month period.
Nematodes				
Nematodes	Not Ordered	#/g	> 10	
Bacterial		#/g		
Fungal		#/g		
Fungal/Root		#/g		
Predatory		#/g		
Root		#/g		
Miscellaneous Testing				
E.coli	Not Ordered	CFU/g	< 800	
pH	Not Ordered			
Electrical Conductivity	Not Ordered	µs/cm	< 1000	
Organic Matter	Not Ordered			

Notes

Thermal Compost 8 Months old. Starting materials: Goat, Chip, Pasture, Fish etc.

Penergetic-k Compost treated pile

Compost Detail

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Assay Name	Result	Units	Range	Commentary
Organism Biomass Data				
Dry Weights	0.33	N/A	0.2 to 0.8	Within normal moisture levels for compost
Active Fungi	41.79	µ/g	> 3	Fungal activity at good levels for compost.
Total Fungi	2697.83	µ/g	> 300	Excellent fungal biomass. - Fungal diversity appears at good levels.
Hyphal Diameter	2.50	µm	> 2.5	
Active Bacteria	165.50	µ/g	> 3	Bacterial activity at high levels for compost
Total Bacteria	1380.40	µ/g	> 300	Good bacterial biomass.
Actinobacteria	160.03	µ/g	< 20	
Organism Biomass Ratios				
TF:TB	1.95		0.01 to 10	Fungal dominated compost - Suitable for tree crops etc.
AF:TF	0.02		< 0.1	Fungal component mature ie less than 10%
AB:TB	0.12		< 0.1	Not quite mature. Wait to apply this material until activity drops below 0.10.
AF:AB	0.25		0.01 to 10	Fungal dominated, becoming more bacterial.
Protozoa (Protists)				
Flagellates	84366.68	#/g	> 10000	Excellent protozoan numbers indicating good nutrient cycling potential. High ciliate numbers indicate possible anaerobic conditions occuring during composting process.
Amoebae	42183.34	#/g	> 10000	
Ciliates	1399.72	#/g	< 1266	
Nitrogen Cycling Potential	224+	kg/ha		Nitrogen levels dependent on plant needs. Estimated availability over a 3 month period.
Nematodes				
Nematodes	Not Ordered	#/g	> 10	
Bacterial		#/g		
Fungal		#/g		
Fungal/Root		#/g		
Predatory		#/g		
Root		#/g		
Miscellaneous Testing				
E.coli	Not Ordered	CFU/g	< 800	
pH	Not Ordered			
Electrical Conductivity	Not Ordered	µs/cm	< 1000	
Organic Matter	Not Ordered			

Notes

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