

Compost Detail



Report prepared for:
SD Microbes
Andy Allen
955 8th Street
Ramona, CA 92065

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

Report Sent: 04/08/2021
Sample #: 01-134006
Unique ID: SD Microbes Compost Sample
Plant: N/A
Season: N/A
Invoice Number: 19995
Sample Received: 03/29/2021

Earthfort, LLC
635 SW Western Blvd
Corvallis, OR 97333
+1 (541) 257-2612
info@earthfort.com
http://earthfort.com

Assay Name	Result	Units	Range	Commentary
Organism Biomass Data				
Dry Weights	0.35	N/A	0.2 to 0.85	Within normal moisture levels.
Active Fungi	8.35	µ/g	> 3	Fungal activity within normal levels.
Total Fungi	5391.08	µ/g	> 300	Good fungal biomass. - Good fungal diversity. Hyphal diameter: 2.5 to 7.5 µm.
Hyphal Diameter	3.50	µm	> 2.85	Disease suppressive fungi likely present.
Active Bacteria	13.65	µ/g	> 3	Bacterial activity within normal levels.
Total Bacteria	3927.00	µ/g	> 300	Good bacterial biomass. - total bacteria modified on 4/14 - mds, from 0.01 to 0.10
Actinobacteria	24.56	µ/g	< 40	
Organism Biomass Ratios				
TF:TB	1.37		0.1 to 10	Balanced fungal and bacterial biomass.
AF:TF	0.00		< 0.1	Good fungal activity.
AB:TB	0.00		< 0.1	Good bacterial activity.
AF:AB	0.61		0.1 to 10	Fungal dominated, becoming more bacterial.
Protozoa (Protists)				
Flagellates	16677.08	#/g	> 10000	Lacking species diversity.
Amoebae	16677.08	#/g	> 100000	
Ciliates	92.75	#/g	< 334	
Nitrogen Cycling Potential	100-150	lbs/acre		Nitrogen levels dependent on plant needs. Estimated availability over a 3 month period.
Nematodes				
Nematodes	57.16	#/g	> 10	Excellent numbers and diversity
Bacterial	30.05	#/g		
Fungal	5.89	#/g		
Fungal/Root	17.68	#/g		
Predatory	3.54	#/g		
Root	0.00	#/g		
Miscellaneous Testing				
E.coli	Not Ordered	CFU/g	< 800	
pH	5.30			
Electrical Conductivity	Not Ordered	µs/cm	< 1000	
Notes				

Nematode Detail



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Nematode Genus	Result	Units	Group	Common Name
Bacterial Feeders				
Alaimus	0.59	number/g	Bacterial Feeders	
Butlerius	18.27	number/g	Bacterial Feeders	
Cephalobus	0.59	number/g	Bacterial Feeders	
Monhystrella	1.77	number/g	Bacterial Feeders	
Panagrolaimus	0.59	number/g	Bacterial Feeders	
Plectus	0.59	number/g	Bacterial Feeders	
Prismatolaimus	0.59	number/g	Bacterial Feeders	
Prodesmodora	0.59	number/g	Bacterial Feeders	
Rhabditidae	6.48	number/g	Bacterial Feeders	Family
Fungal Feeders				
Aporcelaimellus	1.18	number/g	Fungal Feeders	
Eudorylaimus	4.12	number/g	Fungal Feeders	
Mesodorylaimus	0.59	number/g	Fungal Feeders	
Fungal/Root Feeders				
Ditylenchus	15.91	number/g	Fungal/Root Feeders	Stem & Bulb nematode
Filenchus	1.77	number/g	Fungal/Root Feeders	
Predatory				
Mononchoides	2.36	number/g	Predatory	
Seinura	1.18	number/g	Predatory	
Root Feeders				

Compost Graphs



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Assay	Range	Result
Organism Biomass Data		
Dry Weight	0.2-0.85	0.35
Active Fungi	> 3	8.35
Total Fungi	> 300	5391.08
Active Bacteria	> 3	13.65
Total Bacteria	> 300	3927.00
Organism Biomass Ratios		
TF:TB	0.1-10	1.37
AF:TF	< 0	0.00
AB:TB	< 0	0.00
AF:AB	0.1-10	0.61
Protozoa (Protists)		
Flagellates	> 10000	16677.08
Amoebae	> 100000	16677.08
Ciliates	< 334	92.75
Nematodes		
Nematodes	> 10	57.16

Compost Detail

Report prepared for:
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Report Sent: 19 Feb 2021
Sample #: 01-133771
Unique ID: Compost
Invoice Number: 19844
Sample Recieved: 08 Feb 2021



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Assay Name	Result	Units	Desired Level	Commentary
Organism Biomass Data				
Dry Weight	0.39	N/A	0.20 to 0.85	Within normal moisture levels.
Active Fungi	35	µg/g	> 3	Fungal activity within normal levels. -
Total Fungi	4,062	µg/g	> 300	Good fungal biomass. - Good fungal diversity. Hyphal diameter: 2.5 to 7.0 µm.
Hyphal Diameter	3.00	µm		Disease suppressive fungi likely present. -
Active Bacteria	24	µg/g	> 3	Bacterial activity within normal levels.
Total Bacteria	2,517	µg/g	> 300	Good bacterial biomass. -
Actinobacteria	58.77	µg/g	< 40.00	
Organism Biomass Ratios				
TF:TB	1.61		0.10 to 10.00	Balanced fungal and bacterial biomass.
AF:TF	0.01		< 0.10	Good fungal activity.
AB:TB	0.01		< 0.10	Good bacterial activity.
AF:AB	1.46		0.10 to 10.00	Fungal dominated, becoming more fungal.
Protozoa (Protists)				
Flagellates	119,141	number/g	> 10000	High ciliate numbers indicate possible anaerobic conditions.
Amoebae	148,826	number/g	> 100000	
Ciliates	3,585	number/g	< 2680	
Nitrogen Cycling Potential	250+	lbs/acre		Nitrogen levels dependent on plant needs. Estimated availability over a 3 month period
Nematodes				
Nematodes	71.86	number/g	> 10.00	Excellent numbers, limited diversity
Bacterial	69.09	number/g		
Fungal	1.38	number/g		
Fungal/Root	0.00	number/g		
Predatory	1.38	number/g		
Root	0.00	number/g		
Miscellaneous Testing				
E.coli	Not Ordered	CFU/g	< 800.00	For most areas, the maximum E.coli CFU/g is 800 - 1000. Please check your local regulations for more information. -
pH	6.00			
Electrical Conductivity	Not Ordered	µS/cm	< 1000.00	

Compost Notes:

Nematode Detail

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**# per gram
Classified by type and identified to genus.
If section is blank, no nematodes identified.**

Nematode Genus	number/g	Units	Group	Common Name
Acrobeles	3.45	number/g	Bacterial Feeders	
Butlerius	4.15	number/g	Bacterial Feeders	
Plectus	4.15	number/g	Bacterial Feeders	
Rhabditidae	57.35	number/g	Bacterial Feeders	
Eudorylaimus	1.38	number/g	Fungal Feeders	
Seinura	1.38	number/g	Predatory	

Compost Biology Report

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Assay	Below Range	Desired Range	Above Range	Range	Result
Dry Weight				0.2 - 0.85	0.39
Active Fungi				> 3 µg/g	35.78 µg/g
Total Fungi				> 300 µg/g	4,062.35 µg/g
Active Bacteria				> 3 µg/g	24.51 µg/g
Total Bacteria				> 300 µg/g	2,517.31 µg/g
TF:TB				0.1 - 10	1.61
AF:TF				< 0.1	0.01
AB:TB				< 0.1	0.01
AF:AB				0.1 - 10	1.46
Flagellates				> 10000 /g	119,141.59 /g
Amoebae				> 100000 /g	148,826.11 /g
Ciliates				< 2680 /g	3,585.11 /g
Nematodes				> 10 /g	71.86 /g



30m Strategic Planning Call

Date/Time: 4/14/2021 @ 9am

Consultant: **Matt**

Company: SD Microbes

Sample Type: Compost

Location: Ramona, CA

Sample #(s): #01-134006, 01-133771

Point of Contact: **Andrew Allen & Joseph**

Size of Operation: --

Phone/Email:

Methods Used: --

andrew@sdmicrobeworks.com

How can we help you today?

- See Document Attached.
- SD Microbes is planning on selling this compost on our website , in biodegradable bags much like the Bokashi we sell. We believe we have a high quality compost for our customers and want to be able to supply the very best that we can. So really trying to get a feel about what is good, what is bad if any, and what we should promote about this compost for our customers. We would like to be able to show the results to our customers so that they can be confident in it as well.

Discussion Points

- Total bacteria should be 3900 - this was a decimal error, we will be sending out an updated report.
- **Overall: Incredibly high fungal content!**

Organism Biomass Ratios

- #4006 -> Why is it becoming more bacterial? It is really not becoming more bacterial, it is pretty stable overall.
- #3771 -> Is the high Active Fungi because it was stored undisturbed for 3 months before sampling? We are looking at this number - there is no problem here.
- **Protozoa**
 - #4006 -> Why is the Amoebae so low? Does it indicate anything? What potential problems could it cause? Protozoa are interesting. Time and temp not always your friend. Ciliates are doing much better the second time around. Amoebae are there, they will just wake up as the system changes.
- **Nematode Genus**
 - #4006 Is the Stem & Bulb nematode going to cause any problems? There is one genus that appears to be an issue, but this one fungal/root feeder - because it is in a compost, it is a fungal feeder because there is no true food source for it. You could do DNA testing for this particular genus.
 - #4006 Will the Predatory nematodes eat the Root Feeders? The predatory genus eats the root feeders, yes, but if you have them it will create an imbalance anyway, so this isn't necessarily a good solution to lean on, rather than a good healthy, systematic balance and diversity.
 - #4006 In your experience, where does having 16 Genus types of Nematodes compare to other composts? This material has great, broad diversity, one of the best we have seen! So, great job.
- **Is the pH level too low in either of the two reports?** 6 and 5.3 are fine. A really good, high fungal compost will have a fairly low pH. If you're going to grow plants directly into this material without any additional mixes, some plants might not do well. (They are ideally using this material for compost teas, and it will adopt the pH of the water being used because of the dilution) This is perfectly in line with what we've experienced.

- **What does Amoebae in red mean?** The overall count is lower than we'd like to see.
- **Does it have any effect on the customer's goals?** No, if you're using this to make tea, it hardly will matter. 48-72 hours of brewing and feeding allows for protozoa and amoebae to grow exponentially. This really has to do with the nutrient cycling of the material. It would be great if it was higher, but it doesn't really matter.
- **How to increase these amoebae and protozoa levels?** Increasing time, minimizing disturbance. Fungi and protozoa are very sensitive to disturbance: anytime you move, mix, stir, etc. this will heavily affect these populations.

Other Questions:

- **How do these reports compare to the majority of samples you look at?**
 - For the most part, they're very comparable to a high-end quality compost. Top 20% of high quality. Your fungal content puts you in the top 1-2% of fungal dominated composts. If you're making teas, this will significantly improve and effect
- **Which of the two reports are better?**
 - The both have +/- one has higher protozoa, amoebae, etc. So they are pretty comparable.
- **How do these results compare to the highest quality samples you look at?**
 - Both indicate excellent potential for helping the growers. I believe we already addressed this.
- **What results on these reports do you consider to be of the most value?**
 - Depends on the use of the material, the customer's needs, the soil needs. Fungi tends to be one of those areas where people are lacking. As a component in a container mix, you really need a good balance. Fungi is really the top goal for most customers. With our holistic approach, any one of these numbers could be the most important at different times, based on the natural nutrient cycle.

- **Can you describe in detail what the benefits of our compost will be for the home gardener?**
 - The high fungal content will be fantastic for the at home gardener.
- **How do we keep our compost in it's best condition once it's taken out of the field and stored in our distribution center?**
 - Minimize disturbance, limit the amount of times you move or touch it.
 - Avoid rains and heavy weather.
 - Make sure it can breathe, and this is really all you can do.
- **It rained a lot before we transferred #4006 from the field. Could that have an effect on the report, and should we wait next time for the sample to dry out a bit?** No, it did not appear to be too wet, so that should not be necessary.
- **Our affiliates want to post these results. What kind of issues, if any, might they run into?** There should be no issues, just be sure that they have the most current reports available.

Challenges:

- Minimizing disturbance as much as possible to maintain the high fungal content.

Recommendations:

#1 - Test your compost material at least once a year to monitor it's cycling potential and overall balance to assure you're providing a quality product to your clients.