

# Biological Analysis Soil



## Report prepared for:

WERC / NIMSU

David C Johnson

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Report Sent: 8/15/2013

Sample#: 01-117115 | Submission: 01-023294

Unique ID: 130805-6

Plant: Not Indicated

Invoice Number: 0

Sample Received: 8/7/2013

For interpretation of this report please contact:

Earthfort Labs

[info@earthfort.com](mailto:info@earthfort.com)

(541) 257-2612

Consulting fees may apply

Organism Biomass Data	Dry Weight	Active Bacteria (µg/g)	Total Bacteria (µg/g)	Active Fungi (µg/g)	Total Fungi (µg/g)	Hyphal Diameter (µm)	Nematode detail (# per gram or # per mL) Classified by type and identified to genus. (If section is blank, no nematodes identified.)
<b>Results</b>	0.480	89.5	621	82.7	2682	2.85	Bacterial Feeders 18.62
<b>Comments</b>	In Good Range	Above range	Above range	Above range	Above range		Butlerius 1.10
<b>Expected Range</b>	0.45	30	300	30	300		Cephalobus 4.93
Low							Cuticularia 0.55
High	0.85	60	600	60	600		Diplogasteritus 7.12
							Diploscopter 2.19
							Prodesmodora 2.19
							Rhabditidae 0.55
							Fungal/Root Feeders 4.38
							Ditylenchus 3.29
							Stem & Bulb nematode 1.10
							Filenchus
Organism Biomass Ratios	Total Fungi to Tot. Bacteria	Active to Total Fungi	Active to Total Bacteria	Active Fungi to Act. Bacteria	Nitrogen Cycling Potential (lbs/ac)		
<b>Results</b>	4.32	0.03	0.14	0.92	300+		
<b>Comments</b>	High	Low	Good	Low			
<b>Expected Range</b>	1	0.1	0.1	1			
Low							
High	2	0.15	0.15	2			

635 SW Western Blvd Corvallis, OR 97333 USA

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[www.oregonfoodweb.com](http://www.oregonfoodweb.com)

**S1-Figure 1:** Soil microbial community analyses of the compost used to mix soil treatments 0-5 analyzed by Soil Foodweb Oregon LLC 635 SW Western Blvd, Corvallis OR 97333 to enumerate fungal, bacterial, protozoan and nematode populations.



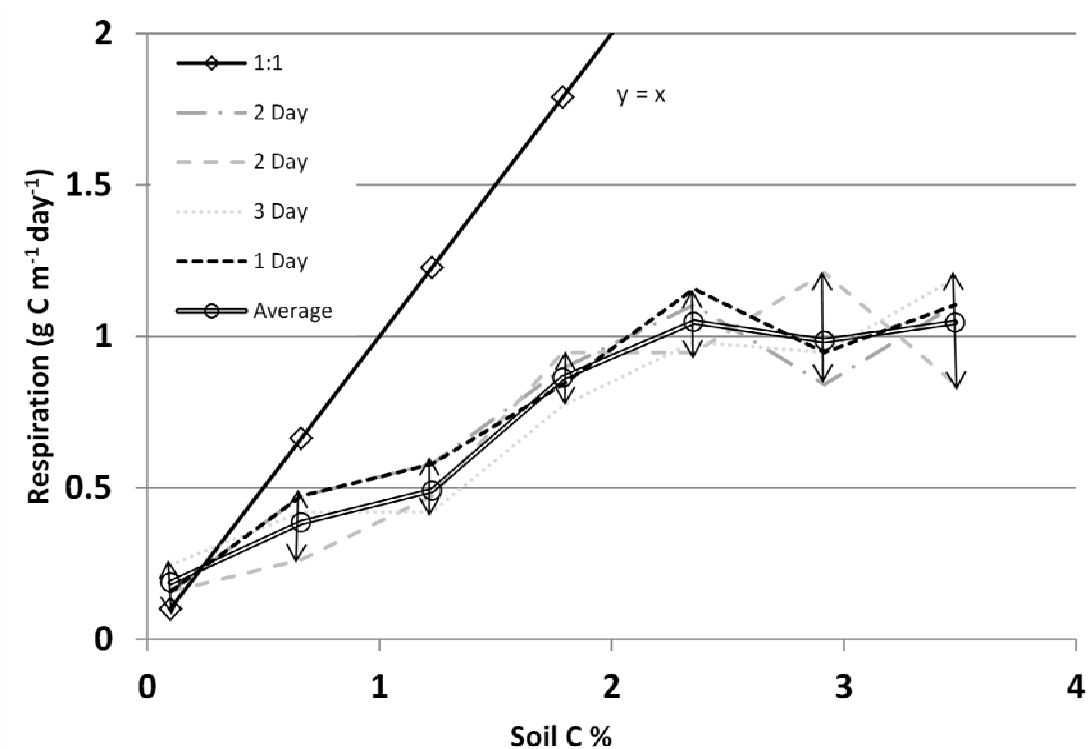
# Biological Analysis

## Soil

Report prepared for: WERC / NMSU David C Johnson PO Box 30001 MSC WERC Las Cruces, NM 88003 USA (575) 646-5474 davidcjohnson@nmsu.edu												Report Sent: 8/15/2013 Sample#: 01-117114   Submission: 01-023294 Unique ID: 130805-0 Plant: Not Indicated Invoice Number: 0 Sample Received: 8/7/2013												For interpretation of this report please contact: Earthfort Labs info@earthfort.com (541) 257-2612  Consulting fees may apply																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Results Comments Expected Low Range	0.970	0.53	214	0	7.93	3	Bacterial Feeders	0.05	0.01	0.01	0.01	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

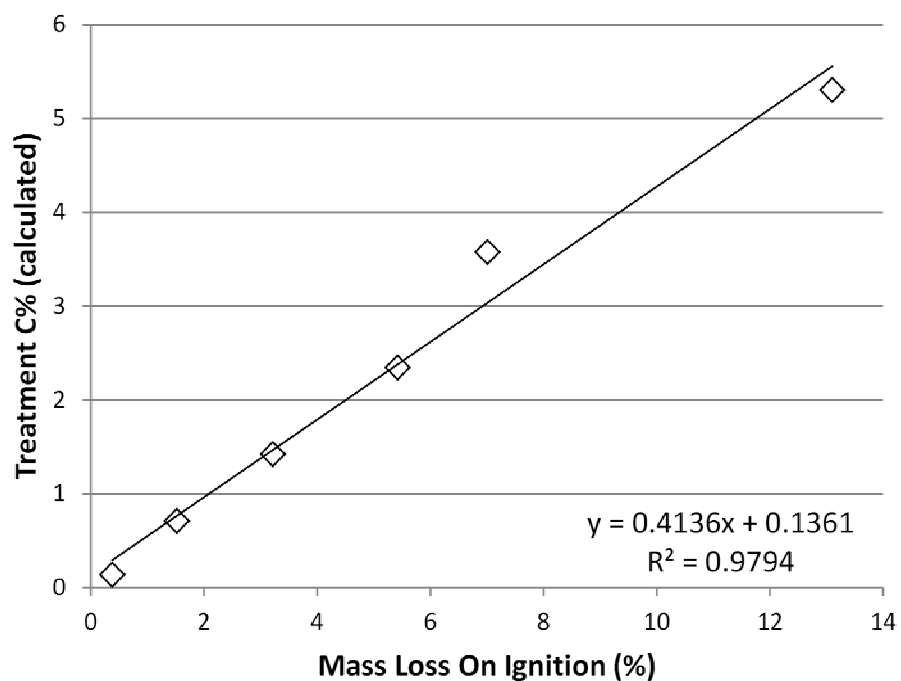
**S1-Figure 2:** Soil microbial community analyses of the alluvial sand used to mix soil treatments 0-5 analyzed by Soil Foodweb Oregon LLC 635 SW Western Blvd, Corvallis OR 97333 to enumerate fungal, bacterial, protozoan and nematode populations.

S1-Figure 3



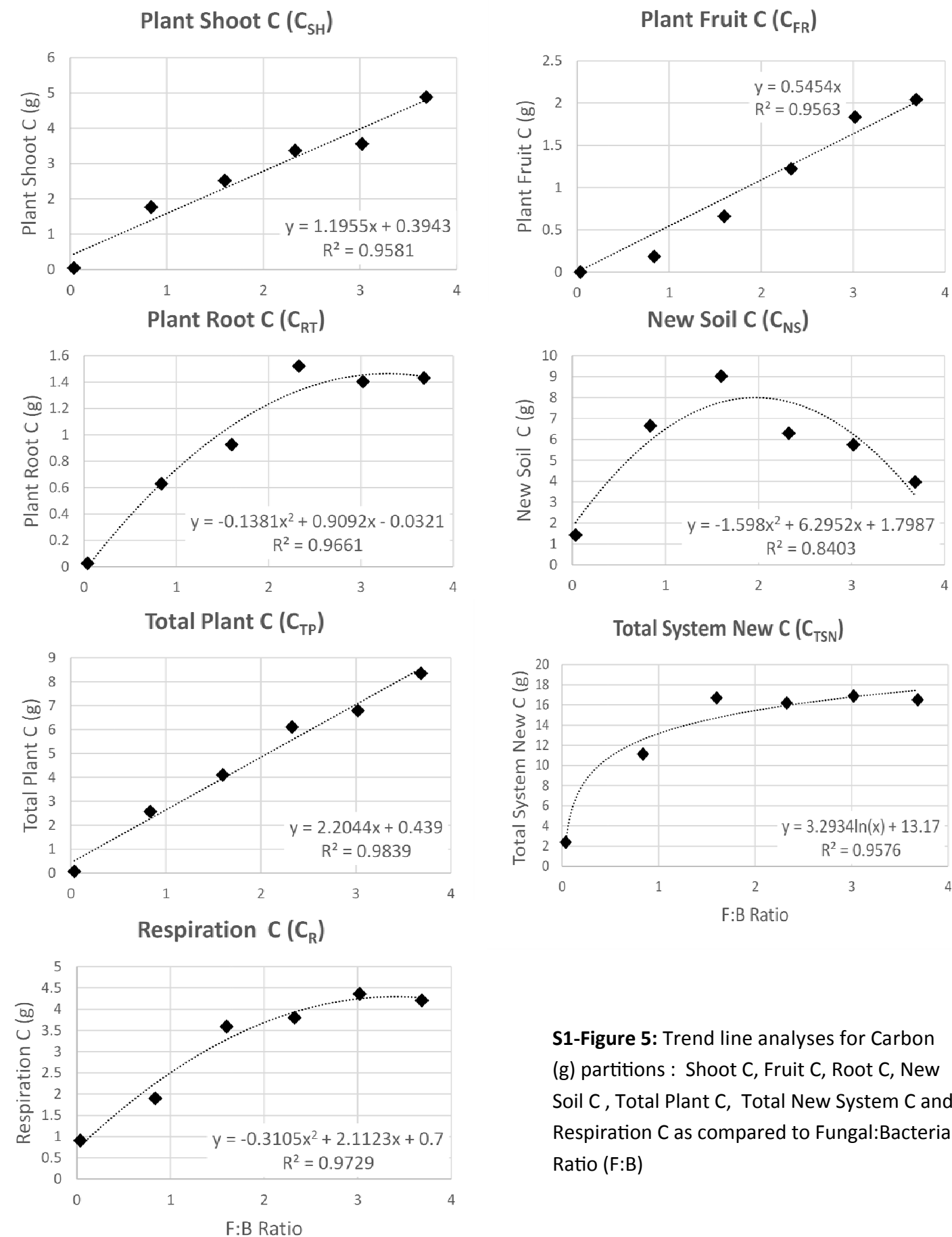
**S1-Figure 3:** Results of static alkali reactor sensitivity analyses (with 1, 2 and 3 day reactor operating times) conducted to confirm CO<sub>2</sub> absorption characteristics, variance and reproducibility with different reaction times.

S1-Figure 4



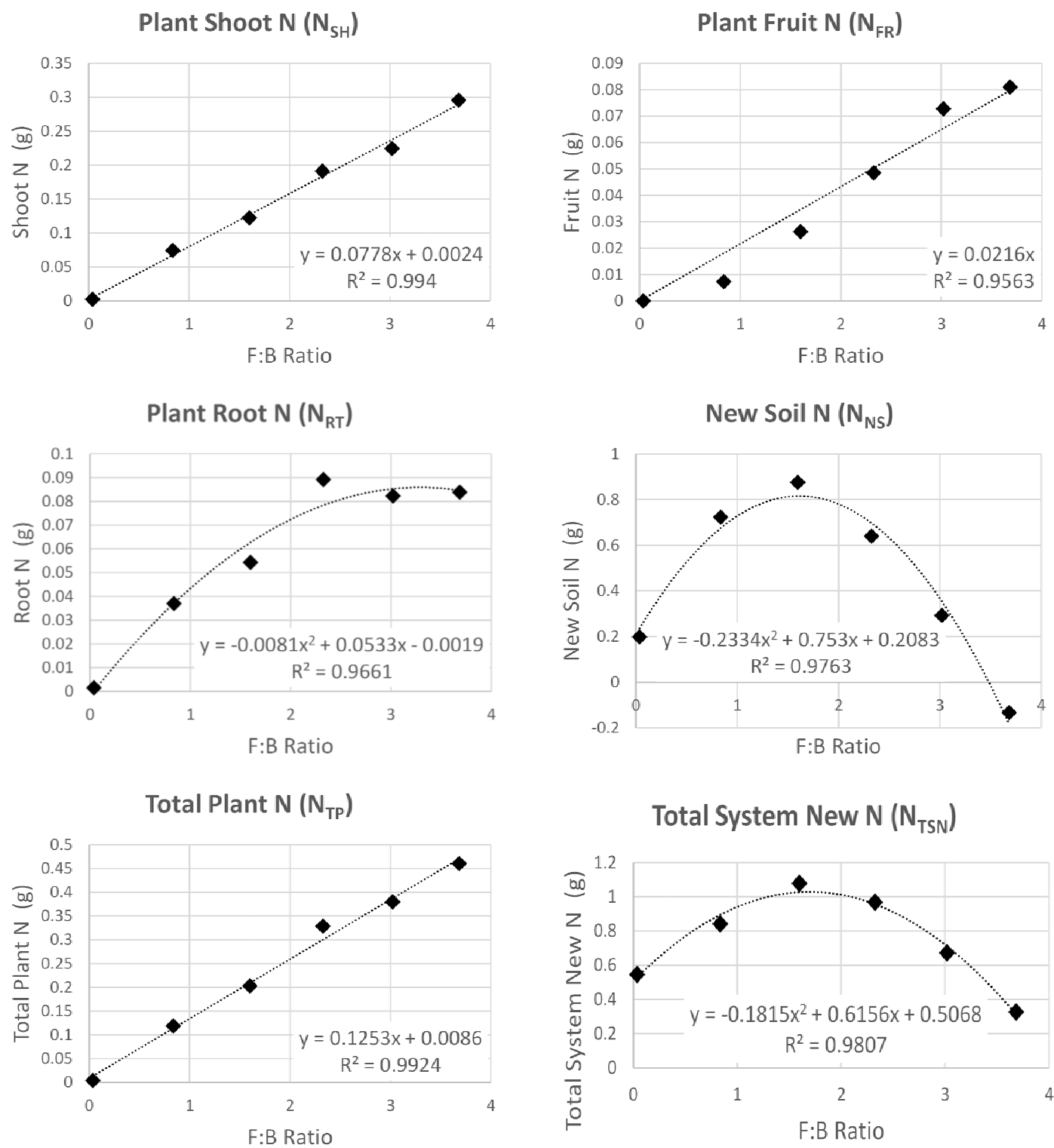
**S1-Figure 4:** Results from a GLM regression analysis, comparing initial calculated treatment soil mix (C%) with mass Loss on Ignition analyses to confirm experimental setup, produced a linear trend line with an  $r^2=0.98$  ( $P= 0.0002$ ).

S1-Figure 6



**S1-Figure 5:** Trend line analyses for Carbon (g) partitions : Shoot C, Fruit C, Root C, New Soil C , Total Plant C, Total New System C and Respiration C as compared to Fungal:Bacterial Ratio (F:B)

S1-Figure 7



**S1-Figure 6:** Trend line analyses for Nitrogen (g) partitions: Plant Canopy N, Chile N, Root N, New Soil N , Total Plant N and Total System New N.

## Abbreviations

SYMBOL	DEFINITION
MNPP	Mean Net Primary Production (g dry aboveground biomass m <sup>-2</sup> yr <sup>-1</sup> )
BEAM	Biologically Enhanced Agricultural Management
BGE	Bacterial Growth Efficiency
C	Carbon
C <sub>FR</sub>	Plant Fruit Carbon
C <sub>IN</sub>	Initial Soil Carbon
C <sub>NS</sub>	New Soil Carbon
CO <sub>2</sub>	Carbon Dioxide
C <sub>SH</sub>	Plant Shoot Carbon
C <sub>R</sub>	Respiration C
C <sub>RT</sub>	Root Carbon
C <sub>TSN</sub>	Total System New Carbon
F:B	Fungal to Bacterial Ratio (biomass µg g <sup>-1</sup> dry soil)
GLM	General Linear Model
LMRT	Long Mean Residence Time
LOI	Loss On Ignition
MRT	Mean Residence Time
N	Nitrogen
N <sub>2</sub> O	Nitrogen Dioxide
N <sub>FR</sub>	Plant Fruit Nitrogen
N <sub>IN</sub>	Initial Soil Nitrogen
N <sub>NS</sub>	New Soil Nitrogen
N <sub>SH</sub>	Plant Shoot Nitrogen
N <sub>RT</sub>	Root Nitrogen
N <sub>TSN</sub>	Total System New Nitrogen
PE	Priming Effect
Pg	Petagram (10 <sup>15</sup> g)
SMC	Soil Microbial Communities
SOC	Soil Organic Carbon
SOM	Soil Organic Matter

S2-Table 1

Treatment Identifier	Sand Wet Mass (g)	Compost Wet Mass (g)	Total Soil Wet Mass (g)	Total Wt + Container	Sand Dry Mass (g)	Compost Dry Mass (g)	Dry Mass Grams	Water Mass
0	1511.20	0.00	1511.20	1553.20	1465.86	0.00	1465.86	45.34
1	1259.33	186.03	1445.36	1487.36	1221.55	96.73	1318.29	127.07
2	1007.47	372.06	1379.52	1421.52	977.24	193.47	1170.71	208.81
3	755.60	558.08	1313.68	1355.68	732.93	290.20	1023.14	290.55
4	503.73	744.11	1247.85	1289.85	488.62	386.94	875.56	372.29
5	251.87	930.14	1182.01	1224.01	244.31	483.67	727.98	454.02

Beginning Soil Carbon and Nitrogen Metrics

Treatment Identifier	Sand	Compost	Carbon		Nitrogen		Total Grams N	N %	C:N
			Total Grams C	C %	Sand N (g)	Compost N (g)			
0	2.05	0.00	2.05	0.14%	0.15	0.00	0.15	0.01%	14.00
1	1.71	7.65	9.36	0.71%	0.12	0.58	0.70	0.05%	13.33
2	1.37	15.30	16.67	1.42%	0.10	1.16	1.26	0.11%	13.25
3	1.03	22.96	23.98	2.34%	0.07	1.74	1.81	0.18%	13.22
4	0.68	30.61	31.29	3.57%	0.05	2.32	2.37	0.27%	13.20
5	0.34	38.26	38.60	5.30%	0.02	2.90	2.93	0.40%	13.19

Microbial Metrics

Treatment Identifier	Bacteria		Fungi		Microbial Mass (ug/reactor)	F/B
	Sand-Bacteria Mass	Compost-Bacteria Mass	ug/reactor	Sand-Fungi Mass	Compost-Fungi Mass	
0	313,695.08	0.00	313,695.08	11,624.31	0.00	0.04
1	261,412.57	60,072.14	321,484.71	9,686.92	259,442.02	0.84
2	209,130.05	120,144.29	329,274.34	7,749.54	518,884.03	1.60
3	156,847.54	180,216.43	337,063.97	5,812.15	778,326.05	2.33
4	104,565.03	240,288.58	344,853.61	3,874.77	1,037,768.07	3.02
5	52,282.51	300,360.72	352,643.24	1,937.38	1,297,210.08	3.68

Treatment	0	1	2	3	4	5
Ending Soil Dry Mass (g)	1448.509	1329.191	1169.100	1021.238	841.958	687.371
Ending Soil Carbon %	0.156	1.221	2.064	3.061	4.467	6.056
Ending Soil Nitrogen %	0.024	0.107	0.183	0.240	0.316	0.406
Shoot Mass (g)	0.097	3.986	5.690	7.611	8.036	11.030
Fruit Mass (g)	0.000	0.424	1.520	2.812	4.223	4.697
Root Mass (g)	0.071	1.729	2.541	4.174	3.852	3.928

Plant Component C% & N%	
Ending Root Carbon %	36.41666667
Ending Shoot Carbon %	44.22666667
Ending Fruit Carbon %	43.43666667
Ending Root Nitrogen %	2.136666667
Ending Shoot Nitrogen %	3.512666667
Ending Fruit Nitrogen %	1.723333333



S2-Table 2

Ending Soil Dry Mass

0	1	2	3	4	5
1458.807	1295.747	1141.478523	1030.39	832.76	686.955
1453.276	1337.15	1164.511556	1000.791	851.6786	671.4092
1430.725	1338.199	1201.31045	1012.162	853.7096	694.3435
1451.226	1345.667		1041.608	829.6822	696.7759

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
0	4	5794.034	1448.5085	150.8086123
1	4	5316.763	1329.19075	511.4831522
2	3	3507.300529	1169.100176	910.7564496
3	4	4084.951	1021.23775	333.0498629
4	4	3367.8304	841.9576	155.9628786
5	4	2749.4836	687.3709	130.6733385

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1672477.121	5	334495.4242	1003.348206	2.2402E-20	2.809996175
Within Groups	5667.446433	17	333.3792019			
Total	1678144.568	22				

	0	1	2	3	4	5
Mean	1448.5085	1329.19075	1169.100176	1021.23775	841.9576	687.3709
Standard Error	6.140207902	11.30799664	17.42370463	9.124826888	6.244254932	5.71562198
Median	1452.251	1337.6745	1164.511556	1021.276	842.2193	690.64925
Standard Deviation	12.2804158	22.61599328	30.17874168	18.24965378	12.48850986	11.43124396
Sample Variance	150.8086123	511.4831522	910.7564496	333.0498629	155.9628786	130.6733385
Skewness	-1.585105189	-1.826830279	0.668398307	-0.008393589	-0.02947905	-1.292412948
Range	28.082	49.92	59.831927	40.817	24.0274	25.3667
Minimum	1430.725	1295.747	1141.478523	1000.791	829.6822	671.4092
Maximum	1458.807	1345.667	1201.31045	1041.608	853.7096	696.7759
Sum	5794.034	5316.763	3507.300529	4084.951	3367.8304	2749.4836
Count	4	4	3	4	4	4

Ending Soil Carbon %

0	1	2	3	4	5
0.186	1.158	1.994	3.22	4.674	5.646
0.1	1.024	1.722	2.785	4.51	6.836
0.147	1.541	2.55	3.018	4.012	6.093
0.19	1.16	1.99	3.22	4.67	5.65

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
0	4	0.623	0.15575	0.001757583
1	4	4.883	1.22075	0.049632917
2	4	8.256	2.064	0.121178667
3	4	12.243	3.06075	0.04286225
4	4	17.866	4.4665	0.097643667
5	4	24.225	6.05625	0.314234917

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	93.87119533	5	18.77423907	179.569008	1.05089E-14	2.772853153
Within Groups	1.88193	18	0.104551667			
Total	95.75312533	23				

	0	1	2	3	4	5
Mean	0.15575	1.22075	2.064	3.06075	4.4665	6.05625
Standard Error	0.020961771	0.111392231	0.174053632	0.103516001	0.156239933	0.280283302
Median	0.1665	1.159	1.992	3.119	4.59	5.8715
Standard Deviation	0.041923542	0.222784462	0.348107263	0.207032002	0.312479866	0.560566603
Sample Variance	0.001757583	0.049632917	0.121178667	0.04286225	0.097643667	0.314234917
Skewness	-0.959830314	1.492646109	1.170156044	-0.974268891	-1.670230358	1.279409504
Range	0.09	0.517	0.828	0.435	0.662	1.19
Minimum	0.1	1.024	1.722	2.785	4.012	5.646
Maximum	0.19	1.541	2.55	3.22	4.674	6.836
Sum	0.623	4.883	8.256	12.243	17.866	24.225
Count	4	4	4	4	4	4

S2-Table 4

Ending Soil Nitrogen %

0	1	2	3	4	5
0.02	0.106	0.162	0.246	0.308	0.423
0.035	0.105	0.2	0.231	0.329	0.395
0.03	0.108	0.208	0.234	0.318	0.387
0.01	0.11	0.16	0.25	0.31	0.42

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
0	4	0.095	0.02375	0.000122917
1	4	0.429	0.10725	4.91667E-06
2	4	0.73	0.1825	0.000627667
3	4	0.961	0.24025	8.425E-05
4	4	1.265	0.31625	9.09167E-05
5	4	1.625	0.40625	0.00032225

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.386708208	5	0.077341642	370.3756701	1.72819E-17	2.772853153
Within Groups	0.00375875	18	0.000208819			
Total	0.390466958	23				

	0	1	2	3	4	5
Mean	0.02375	0.10725	0.1825	0.24025	0.31625	0.40625
Standard Error	0.005543389	0.001108678	0.012526638	0.00458939	0.004767512	0.008975662
Median	0.025	0.107	0.181	0.24	0.314	0.4075
Standard Deviation	0.011086779	0.002217356	0.025053277	0.00917878	0.009535023	0.017951323
Sample Variance	0.000122917	4.91667E-06	0.000627667	8.425E-05	9.09167E-05	0.00032225
Skewness	-0.481563048	0.481563048	0.08203442	0.070152779	0.978495002	-0.144991701
Range	0.025	0.005	0.048	0.019	0.021	0.036
Minimum	0.01	0.105	0.16	0.231	0.308	0.387
Maximum	0.035	0.11	0.208	0.25	0.329	0.423
Sum	0.095	0.429	0.73	0.961	1.265	1.625

S2-Table 5

Shoot Mass (g)

0	1	2	3	4	5
0.1167	3.3469	5.4748	8.0426	8.7749	13.3571
0.1644	4.5046	6.0747	7.9015	7.7082	9.3811
0.0225	3.8626	5.52	7.0299	7.8018	11.196
0.0856	4.2284		7.469	7.8575	10.1853

Anova: Single Factor

SUMMARY					
Groups	Count	Sum	Average	Variance	
0	4	0.3892	0.0973	0.0035369	
1	4	15.9425	3.985625	0.250459843	
2	3	17.0695	5.689833333	0.111602523	
3	4	30.443	7.61075	0.209503257	
4	4	32.1424	8.0356	0.246712433	
5	4	44.1195	11.029875	2.958446549	

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	283.8453529	5	56.76907058	85.94341071	1.86418E-11	2.809996175
Within Groups	11.22918199	17	0.660540117			
Total	295.0745349	22				

	0	1	2	3	4	5
Mean	0.0973	3.985625	5.689833333	7.61075	8.0356	11.029875
Standard Error	0.029735921	0.250229816	0.192875196	0.228857629	0.248350777	0.860006766
Median	0.10115	4.0455	5.52	7.68525	7.82965	10.69065
Standard Deviation	0.059471842	0.500459631	0.334069638	0.457715257	0.496701554	1.720013532
Sample Variance	0.0035369	0.250459843	0.111602523	0.209503257	0.246712433	2.958446549
Skewness	-0.350842681	-0.576303389	1.696447843	-0.651442041	1.907102585	0.985766692
Range	0.1419	1.1577	0.5999	1.0127	1.0667	3.976
Minimum	0.0225	3.3469	5.4748	7.0299	7.7082	9.3811
Maximum	0.1644	4.5046	6.0747	8.0426	8.7749	13.3571
Sum	0.3892	15.9425	17.0695	30.443	32.1424	44.1195
Count	4	4	3	4	4	4



S2-Table 6

Fruit Mass (g)

0	1	2	3	4	5
0	0.5414	1.4372	2.6034	4.1799	4.5572
0	0.1946	2.0294	2.9892	4.3162	4.2033
0	0.7423	1.0921	2.8713	4.3683	5.3315
0	0.2171		2.784	4.0273	

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
0	4	0	0	0
1	4	1.6954	0.42385	0.07017651
2	3	4.5587	1.519566667	0.224721023
3	4	11.2479	2.811975	0.026404763
4	4	16.8917	4.222925	0.023318136
5	3	14.092	4.697333333	0.332936823

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	69.94444717	5	13.98888943	151.7424535	6.80686E-13	2.852409165
Within Groups	1.475013918	16	0.09218837			
Total	71.41946109	21				

	0	1	2	3	4	5
Mean	0	0.42385	1.519566667	2.811975	4.222925	4.697333333
Standard Error	0	0.132454247	0.273691446	0.081247712	0.076351385	0.333135019
Median	0	0.37925	1.4372	2.82765	4.24805	4.5572
Standard Deviation	0	0.264908494	0.474047491	0.162495423	0.15270277	0.577006779
Sample Variance	0	0.07017651	0.224721023	0.026404763	0.023318136	0.332936823
Skewness	0	0.467354967	0.758278827	-0.515918896	-0.689405281	1.028420873
Range	0	0.5477	0.9373	0.3858	0.341	1.1282
Minimum	0	0.1946	1.0921	2.6034	4.0273	4.2033
Maximum	0	0.7423	2.0294	2.9892	4.3683	5.3315
Sum	0	1.6954	4.5587	11.2479	16.8917	14.092
Count	4	4	3	4	4	3

S2-Table 7

Root Mass (g)

0	1	2	3	4	5
0.0579	1.1458	2.1713	5.2195	3.6632	4.5716
0.1466	2.3974	2.4668	3.8361	3.0441	3.1789
0.0088	1.6721	2.9855	3.4119	5.0861	4.0429
	1.7013		4.2279	3.6132	3.9188

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
0	3	0.2133	0.0711	0.00487789
1	4	6.9166	1.72915	0.263628537
2	3	7.6236	2.5412	0.16988193
3	4	16.6954	4.17385	0.59698273
4	4	15.4066	3.85165	0.756125203
5	4	15.7122	3.92805	0.329552803

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	44.14964463	5	8.829928925	22.82967311	9.27416E-07	2.852409165
Within Groups	6.18838746	16	0.386774216			
Total	50.33803209	21				

	0	1	2	3	4	5
Mean	0.0711	1.72915	2.5412	4.17385	3.85165	3.92805
Standard Error	0.040323236	0.256723848	0.237964934	0.386323288	0.4347773	0.287033449
Median	0.0579	1.6867	2.4668	4.032	3.6382	3.98085
Standard Deviation	0.069841893	0.513447696	0.412167357	0.772646575	0.869554601	0.574066898
Sample Variance	0.00487789	0.263628537	0.16988193	0.59698273	0.756125203	0.329552803
Skewness	0.820112516	0.491002526	0.785824047	0.957619139	1.352871668	-0.537031097
Range	0.1378	1.2516	0.8142	1.8076	2.042	1.3927
Minimum	0.0088	1.1458	2.1713	3.4119	3.0441	3.1789
Maximum	0.1466	2.3974	2.9855	5.2195	5.0861	4.5716
Sum	0.2133	6.9166	7.6236	16.6954	15.4066	15.7122
Count	3	4	3	4	4	4

S2-Table 8

Plant Component Carbon %

Root	Canopy	Chile
34.73	44.1	43.4
38.47	44.36	43.44
36.05	44.22	43.47

Anova: Single Factor

SUMMARY					
Groups	Count	Sum	Average	Variance	
Root	3	109.25	36.41666667	3.597733333	
Canopy	3	132.68	44.22666667	0.016933333	
Chile	3	130.31	43.43666667	0.001233333	

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	110.9006	2	55.4503	46.00539285	0.00022942	5.14325285
Within Groups	7.2318	6	1.2053			
Total	118.1324	8				

Plant Component Nitrogen %

Root	Canopy	Chile
2.18	3.446	1.75
2.07	3.527	1.73
2.16	3.565	1.69

Anova: Single Factor

SUMMARY					
Groups	Count	Sum	Average	Variance	
Root	3	6.41	2.136666667	0.003433333	
Canopy	3	10.538	3.512666667	0.003694333	
Chile	3	5.17	1.723333333	0.000933333	

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.265934222	2	2.632967111	979.8909978	2.84346E-08	5.14325285
Within Groups	0.016122	6	0.002687			
Total	5.282056222	8				