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APPENDICES

Appendix 1 – Statistical analysis

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
air temp	d dry	6	26.5000	1.51658	.61914	24.9085	28.0915	25.00	29.00
	f dry	6	33.3333	.81650	.33333	32.4765	34.1902	32.00	34.00
	v dry	6	35.5000	2.34521	.95743	33.0389	37.9611	32.00	38.00
	d wet	6	29.3333	1.69312	.69121	27.5565	31.1102	26.00	30.50
	f wet	6	26.1667	.40825	.16667	25.7382	26.5951	26.00	27.00
	v wet	6	28.3333	1.36626	.55777	26.8995	29.7671	26.50	30.00
	Total	36	29.8611	3.76186	.62698	28.5883	31.1339	25.00	38.00
humidity	d dry	6	75.6667	3.26599	1.33333	72.2392	79.0941	71.00	78.00
	f dry	6	48.3333	6.12100	2.49889	41.9097	54.7569	43.00	57.00
	v dry	6	48.5000	3.72827	1.52206	44.5874	52.4126	42.00	53.00
	d wet	6	73.8333	2.22860	.90982	71.4946	76.1721	72.00	78.00
	f wet	6	92.6667	1.63299	.66667	90.9529	94.3804	92.00	96.00
	v wet	6	81.0000	4.28952	1.75119	76.4984	85.5016	77.00	88.00
	Total	36	70.0000	17.00420	2.83403	64.2466	75.7534	42.00	96.00
soil temp	d dry	6	22.6667	.51640	.21082	22.1247	23.2086	22.00	23.00
	f dry	6	29.0000	2.44949	1.00000	26.4294	31.5706	27.00	32.00
	v dry	6	28.1667	2.04124	.83333	26.0245	30.3088	26.00	32.00
	d wet	6	25.4167	.49160	.20069	24.9008	25.9326	25.00	26.00
	f wet	6	25.0000	.00000	.00000	25.0000	25.0000	25.00	25.00
	v wet	6	24.6667	.51640	.21082	24.1247	25.2086	24.00	25.00
	Total	36	25.8194	2.51326	.41888	24.9691	26.6698	22.00	32.00
pH	d dry	6	5.5417	.22790	.09304	5.3025	5.7808	5.17	5.87
	f dry	6	6.5883	.41170	.16808	6.1563	7.0204	6.22	7.24
	v dry	6	5.8400	.10936	.04465	5.7252	5.9548	5.73	5.98
	d wet	6	5.5783	.30616	.12499	5.2570	5.8996	5.18	5.83
	f wet	6	6.8117	.33914	.13845	6.4558	7.1676	6.48	7.44
	v wet	6	6.0633	.22214	.09069	5.8302	6.2965	5.71	6.36
	Total	36	6.0706	.55582	.09264	5.8825	6.2586	5.17	7.44
soil moist	d dry	6	26.1500	1.69789	.69316	24.3682	27.9318	23.79	28.21
	f dry	6	9.6700	.95735	.39084	8.6653	10.6747	8.37	10.86
	v dry	6	12.0750	1.87605	.76589	10.1062	14.0438	10.47	15.05
	d wet	6	25.1300	4.91966	2.00844	19.9671	30.2929	20.31	33.98
	f wet	6	23.2833	6.08317	2.48344	16.8994	29.6672	17.81	34.52
	v wet	6	23.2117	3.75163	1.53160	19.2746	27.1488	20.16	28.24
	Total	36	19.9200	7.44748	1.24125	17.4001	22.4399	8.37	34.52
WHC	d dry	6	37.4017	3.98153	1.62545	33.2233	41.5800	31.44	41.36
	f dry	6	39.6017	7.25067	2.96007	31.9926	47.2108	31.12	48.86
	v dry	6	35.3200	2.46821	1.00764	32.7298	37.9102	31.71	38.25
	d wet	6	38.1983	2.19334	.89543	35.8966	40.5001	34.03	40.48
	f wet	6	41.6583	8.22351	3.35723	33.0283	50.2884	30.37	53.46
	v wet	6	33.7017	4.54243	1.85444	28.9347	38.4687	27.51	39.29
	Total	36	37.6469	5.56898	.92816	35.7627	39.5312	27.51	53.46

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
OC	d dry	6	.9783	.24078	.09830	.7256	1.2310	.68	1.33
	f dry	6	2.4200	.64056	.26151	1.7478	3.0922	1.84	3.39
	v dry	6	1.7450	.28034	.11445	1.4508	2.0392	1.37	2.19
	d wet	6	1.5033	.31168	.12724	1.1762	1.8304	1.26	2.12
	f wet	6	2.2017	.42508	.17354	1.7556	2.6478	1.69	2.85
	v wet	6	1.4233	.36396	.14859	1.0414	1.8053	1.02	1.95
	Total	36	1.7119	.61481	.10247	1.5039	1.9200	.68	3.39
OM	d dry	6	1.6817	.41470	.16930	1.2465	2.1169	1.17	2.29
	f dry	6	4.1600	1.09701	.44785	3.0088	5.3112	3.17	5.82
	v dry	6	2.9933	.48186	.19672	2.4877	3.4990	2.35	3.76
	d wet	6	2.5833	.53410	.21805	2.0228	3.1438	2.17	3.64
	f wet	6	3.7883	.73112	.29848	3.0211	4.5556	2.91	4.90
	v wet	6	2.4467	.62276	.25424	1.7931	3.1002	1.76	3.35
	Total	36	2.9422	1.05648	.17608	2.5848	3.2997	1.17	5.82
N	d dry	6	.0968	.01518	.00620	.0809	.1128	.08	.12
	f dry	6	.2362	.06555	.02676	.1674	.3050	.15	.30
	v dry	6	.1443	.01747	.00713	.1260	.1627	.12	.17
	d wet	6	.1423	.03766	.01537	.1028	.1819	.10	.21
	f wet	6	.1827	.03496	.01427	.1460	.2194	.14	.23
	v wet	6	.1277	.02746	.01121	.0988	.1565	.10	.16
	Total	36	.1550	.05649	.00941	.1359	.1741	.08	.30
P	d dry	6	.0255	.01127	.00460	.0137	.0373	.01	.04
	f dry	6	.0010	.00148	.00060	-.0006	.0025	.00	.00
	v dry	6	.0007	.00085	.00035	-.0002	.0016	.00	.00
	d wet	6	.0501	.02011	.00821	.0290	.0712	.02	.08
	f wet	6	.0011	.00156	.00064	-.0006	.0027	.00	.00
	v wet	6	.0003	.00082	.00033	-.0005	.0012	.00	.00
	Total	36	.0131	.02102	.00350	.0060	.0202	.00	.08
C/N ratio	d dry	6	10.0067	1.14838	.46883	8.8015	11.2118	8.54	11.58
	f dry	6	10.6433	2.69207	1.09903	7.8182	13.4685	6.18	13.98
	v dry	6	12.1183	1.89794	.77483	10.1266	14.1101	11.05	15.95
	d wet	6	10.6983	.91587	.37390	9.7372	11.6595	9.89	12.39
	f wet	6	12.1617	1.63112	.66590	10.4499	13.8734	9.63	13.92
	v wet	6	11.1083	1.10415	.45077	9.9496	12.2671	9.85	12.16
	Total	36	11.1228	1.74677	.29113	10.5318	11.7138	6.18	15.95

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
CFU	d dry	6	50.0000	45.55839	18.59914	2.1894	97.8106	3.33	126.67
	f dry	6	95.5557	56.79088	23.18478	35.9573	155.1540	43.33	206.67
	v dry	6	57.2222	35.36583	14.43804	20.1080	94.3363	20.00	110.00
	d wet	6	78.8888	32.77298	13.37951	44.4957	113.2820	40.00	123.33
	f wet	6	105.5555	66.25446	27.04827	36.0257	175.0853	60.00	236.67
	v wet	6	57.7778	8.86088	3.61744	48.4789	67.0768	46.67	73.33
	Total	36	74.1667	46.62846	7.77141	58.3899	89.9435	3.33	236.67
EPI	d dry	6	.6393	.40093	.16368	.2185	1.0600	.00	1.24
	f dry	6	.4006	.06663	.02720	.3307	.4705	.32	.51
	v dry	6	.6694	.23116	.09437	.4268	.9120	.42	1.00
	d wet	6	.4499	.23282	.09505	.2056	.6942	.20	.81
	f wet	6	.3864	.09640	.03936	.2853	.4876	.25	.51
	v wet	6	.5189	.28757	.11740	.2171	.8207	.25	.95
	Total	36	.5107	.25424	.04237	.4247	.5968	.00	1.24

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
air temp	Between Groups	428.472	5	85.694	38.466	.000
	Within Groups	66.833	30	2.228		
	Total	495.306	35			
humidity	Between Groups	9679.667	5	1935.933	131.896	.000
	Within Groups	440.333	30	14.678		
	Total	10120.000	35			
soil temp	Between Groups	166.368	5	33.274	18.246	.000
	Within Groups	54.708	30	1.824		
	Total	221.076	35			
pH	Between Groups	8.355	5	1.671	20.400	.000
	Within Groups	2.457	30	.082		
	Total	10.813	35			
soil moist	Between Groups	1528.264	5	305.653	22.202	.000
	Within Groups	413.009	30	13.767		
	Total	1941.272	35			
WHC	Between Groups	247.538	5	49.508	1.772	.149
	Within Groups	837.938	30	27.931		
	Total	1085.475	35			
OC	Between Groups	8.444	5	1.689	10.585	.000
	Within Groups	4.786	30	.160		
	Total	13.230	35			
OM	Between Groups	24.989	5	4.998	10.652	.000
	Within Groups	14.076	30	.469		
	Total	39.065	35			
N	Between Groups	.071	5	.014	10.290	.000
	Within Groups	.041	30	.001		
	Total	.112	35			
P	Between Groups	.013	5	.003	28.521	.000
	Within Groups	.003	30	.000		
	Total	.015	35			
C_N	Between Groups	22.358	5	4.472	1.589	.193
	Within Groups	84.434	30	2.814		
	Total	106.792	35			

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
CFU	Between Groups	15628.709	5	3125.742	1.551	.204
	Within Groups	60468.749	30	2015.625		
	Total	76097.458	35			
EPI	Between Groups	.438	5	.088	1.441	.238
	Within Groups	1.824	30	.061		
	Total	2.262	35			

Air temperature

Tukey HSD

group	N	Subset for alpha = .05		
		1	2	3
f wet	6	26.1667		
d dry	6	26.5000		
v wet	6	28.3333	28.3333	
d wet	6		29.3333	
f dry	6			33.3333
v dry	6			35.5000
Sig.		.152	.852	.152

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Relative humidity

Tukey HSD

group	N	Subset for alpha = .05			
		1	2	3	4
f dry	6	48.3333			
v dry	6	48.5000			
d wet	6		73.8333		
d dry	6		75.6667	75.6667	
v wet	6			81.0000	
f wet	6				92.6667
Sig.		1.000	.960	.185	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Soil temperature

Tukey HSD

group	N	Subset for alpha = .05		
		1	2	3
d dry	6	22.6667		
v wet	6	24.6667	24.6667	
f wet	6	25.0000	25.0000	
d wet	6		25.4167	
v dry	6			28.1667
f dry	6			29.0000
Sig.		.056	.926	.890

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Soil pH

Tukey HSD

group	N	Subset for alpha = .05		
		1	2	3
d dry	6	5.5417		
d wet	6	5.5783	5.5783	
v dry	6	5.8400	5.8400	
v wet	6		6.0633	
f dry	6			6.5883
f wet	6			6.8117
Sig.		.478	.063	.754

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Soil moisture

Tukey HSD

group	N	Subset for alpha = .05	
		1	2
f dry	6	9.6700	
v dry	6	12.0750	
v wet	6		23.2117
f wet	6		23.2833
d wet	6		25.1300
d dry	6		26.1500
Sig.		.868	.743

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Soil water holding capacity (WHC)

Tukey HSD

group	N	Subset for alpha = .05
		1
v wet	6	33.7017
v dry	6	35.3200
d dry	6	37.4017
d wet	6	38.1983
f dry	6	39.6017
f wet	6	41.6583
Sig.		.127

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Soil organic carbon (OC)

Tukey HSD

group	N	Subset for alpha = .05			
		1	2	3	4
d dry	6	.9783			
v wet	6	1.4233	1.4233		
d wet	6	1.5033	1.5033	1.5033	
v dry	6		1.7450	1.7450	1.7450
f wet	6			2.2017	2.2017
f dry	6				2.4200
Sig.		.235	.730	.052	.065

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Soil organic matter (OM)

Tukey HSD

group	N	Subset for alpha = .05		
		1	2	3
d dry	6	1.6817		
v wet	6	2.4467	2.4467	
d wet	6	2.5833	2.5833	
v dry	6		2.9933	2.9933
f wet	6			3.7883
f dry	6			4.1600
Sig.		.233	.737	.061

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Total Nitrogen

Tukey HSD

group	N	Subset for alpha = .05		
		1	2	3
d dry	6	.0968		
v wet	6	.1277	.1277	
d wet	6	.1423	.1423	
v dry	6	.1443	.1443	
f wet	6		.1827	.1827
f dry	6			.2362
Sig.		.258	.136	.155

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Available phosphorus

Tukey HSD

group	N	Subset for alpha = .05		
		1	2	3
v wet	6	.0003		
v dry	6	.0007		
f dry	6	.0010		
f wet	6	.0011		
d dry	6		.0255	
d wet	6			.0501
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

C/N ratio

Tukey HSD

group	N	Subset for alpha = .05
		1
d dry	6	10.0067
f dry	6	10.6433
d wet	6	10.6983
v wet	6	11.1083
v dry	6	12.1183
f wet	6	12.1617
Sig.		.256

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Colony forming unit (CFU)

Tukey HSD

group	N	Subset for alpha = .05
		1
d dry	6	50.0000
v dry	6	57.2222
v wet	6	57.7778
d wet	6	78.8888
f dry	6	95.5557
f wet	6	105.5555
Sig.		.293

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

Ecophysiological index (EPI)

Tukey HSD

group	N	Subset for alpha = .05
		1
f wet	6	.3864
f dry	6	.4006
d wet	6	.4499
v wet	6	.5189
d dry	6	.6393
v dry	6	.6694
Sig.		.373

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 6.000.

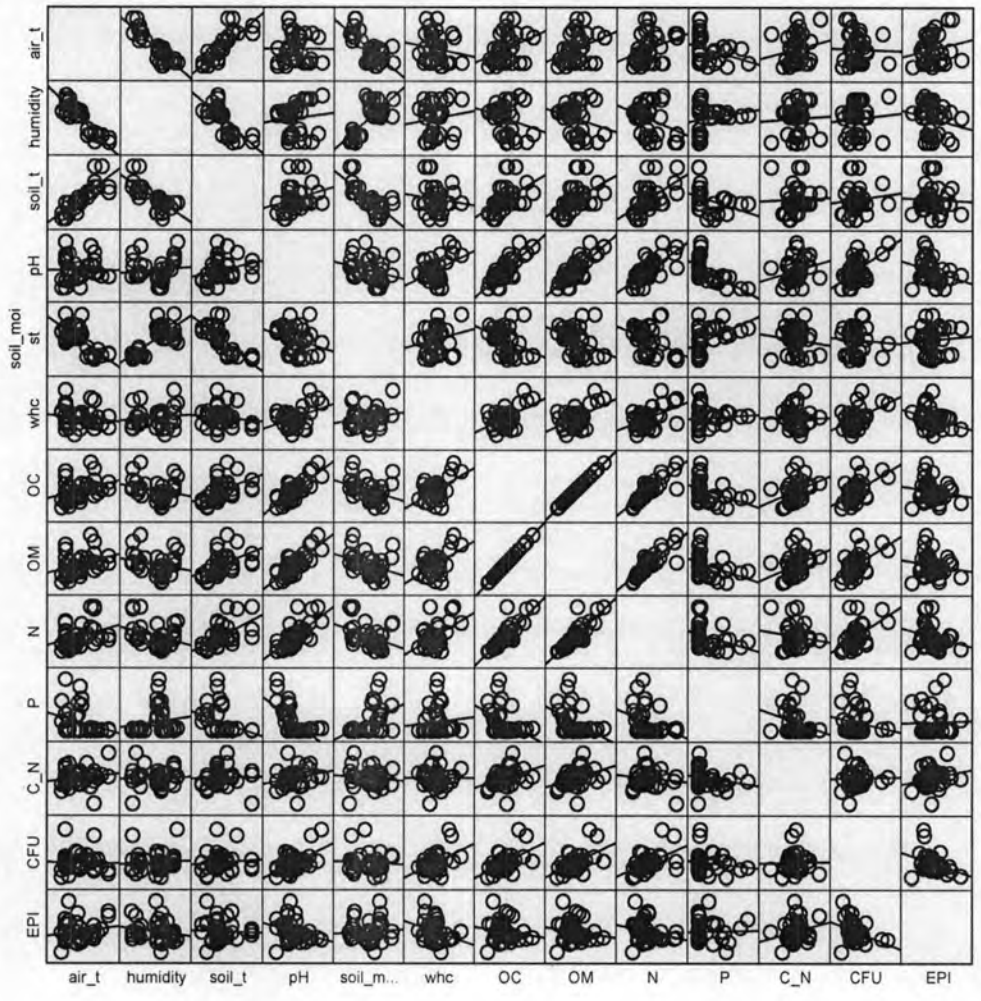
Correlations

		air temp	humidity	soil temp	pH	soil moist	OC	OM	N	P	C/N ratio	CFU	EPI
air temp	Pearson Correlation	1	-.899(**)	.784(**)	-.003	-.740(**)	.331(*)	.330(*)	.326	-.283	.170	-.027	.179
	Sig. (2-tailed)		.000	.000	.984	.000	.048	.049	.053	.095	.322	.876	.297
	N	36	36	36	36	36	36	36	36	36	36	36	36
humidity	Pearson Correlation	-.899(**)	1	-.729(**)	.104	.738(**)	-.237	-.235	-.326	.157	.044	.076	-.185
	Sig. (2-tailed)	.000		.000	.547	.000	.164	.167	.053	.361	.798	.660	.279
	N	36	36	36	36	36	36	36	36	36	36	36	36
soil temp	Pearson Correlation	.784(**)	-.729(**)	1	.255	-.758(**)	.472(**)	.472(**)	.557(**)	-.323	.032	.099	-.040
	Sig. (2-tailed)	.000	.000		.133	.000	.004	.004	.000	.054	.851	.565	.819
	N	36	36	36	36	36	36	36	36	36	36	36	36
pH	Pearson Correlation	-.003	.104	.255	1	-.269	.809(**)	.810(**)	.717(**)	-.626(**)	.234	.576(**)	-.289
	Sig. (2-tailed)	.984	.547	.133		.113	.000	.000	.000	.000	.169	.000	.088
	N	36	36	36	36	36	36	36	36	36	36	36	36
soil moist	Pearson Correlation	-.740(**)	.738(**)	-.758(**)	-.269	1	-.354(*)	-.353(*)	-.376(*)	.458(**)	-.111	-.064	.073
	Sig. (2-tailed)	.000	.000	.000	.113		.034	.035	.024	.005	.519	.710	.673
	N	36	36	36	36	36	36	36	36	36	36	36	36
OC	Pearson Correlation	.331(*)	-.237	.472(**)	.809(**)	-.354(*)	1	1.000(**)	.857(**)	-.410(*)	.365(*)	.541(**)	-.152
	Sig. (2-tailed)	.048	.164	.004	.000	.034		.000	.000	.013	.029	.001	.376
	N	36	36	36	36	36	36	36	36	36	36	36	36
OM	Pearson Correlation	.330(*)	-.235	.472(**)	.810(**)	-.353(*)	1.000(**)	1	.857(**)	-.410(*)	.365(*)	.542(**)	-.153
	Sig. (2-tailed)	.049	.167	.004	.000	.035	.000		.000	.013	.029	.001	.372
	N	36	36	36	36	36	36	36	36	36	36	36	36
N	Pearson Correlation	.326	-.326	.557(**)	.717(**)	-.376(*)	.857(**)	.857(**)	1	-.339(*)	-.132	.520(**)	-.236
	Sig. (2-tailed)	.053	.053	.000	.000	.024	.000	.000		.043	.443	.001	.167
	N	36	36	36	36	36	36	36	36	36	36	36	36
P	Pearson Correlation	-.283	.157	-.323	-.626(**)	.458(**)	-.410(*)	-.410(*)	-.339(*)	1	-.226	-.154	.024
	Sig. (2-tailed)	.095	.361	.054	.000	.005	.013	.013	.043		.185	.368	.888
	N	36	36	36	36	36	36	36	36	36	36	36	36
C/N ratio	Pearson Correlation	.170	.044	.032	.234	-.111	.365(*)	.365(*)	-.132	-.226	1	.022	.235
	Sig. (2-tailed)	.322	.798	.851	.169	.519	.029	.029	.443	.185		.901	.168
	N	36	36	36	36	36	36	36	36	36	36	36	36
CFU	Pearson Correlation	-.027	.076	.099	.576(**)	-.064	.541(**)	.542(**)	.520(**)	-.154	.022	1	-.355(*)
	Sig. (2-tailed)	.876	.660	.565	.000	.710	.001	.001	.001	.368	.901		.034
	N	36	36	36	36	36	36	36	36	36	36	36	36
EPI	Pearson Correlation	.179	-.185	-.040	-.289	.073	-.152	-.153	-.236	.024	.235	-.355(*)	1
	Sig. (2-tailed)	.297	.279	.819	.088	.673	.376	.372	.167	.888	.168	.034	
	N	36	36	36	36	36	36	36	36	36	36	36	36

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlation graph



Appendix 2 - Data

Colony forming unit (CFU) in each class

Chemically-intensive farm in dry season

	Colony Forming Unit (CFU · g^{-1})									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10
D1/1	2.33E+05	5.33E+05	6.00E+05	5.67E+05	5.67E+05	5.67E+05	6.00E+05	6.00E+05	6.00E+05	6.00E+05
D2/1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E+04
D3/1	1.67E+05	3.00E+05	3.67E+05	4.00E+05	3.67E+05	3.67E+05	3.67E+05	3.67E+05	3.67E+05	3.67E+05
D4/1	5.33E+05	6.33E+05	7.33E+05	7.00E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05
D5/1	3.33E+04	3.33E+04	3.33E+04	6.67E+04	6.67E+04	6.67E+04	6.67E+04	6.67E+04	6.67E+04	6.67E+04
D6/1	2.67E+05	8.33E+05	8.67E+05	9.67E+05	9.67E+05	1.07E+06	1.10E+06	1.10E+06	1.10E+06	1.10E+06

Organic farm in dry season

	Colony Forming Unit (CFU · g^{-1})									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10
V1/1	6.67E+04	1.00E+05	1.33E+05	1.33E+05	1.33E+05	1.33E+05	1.33E+05	2.00E+05	2.00E+05	2.00E+05
V2/1	1.33E+05	4.00E+05	4.67E+05	5.00E+05	5.00E+05	5.00E+05	5.00E+05	5.67E+05	5.67E+05	5.67E+05
V3/1	3.33E+04	1.00E+05	1.67E+05	2.33E+05	2.33E+05	2.67E+05	2.67E+05	3.00E+05	3.00E+05	3.00E+05
V4/1	5.33E+05	8.67E+05	1.13E+06	1.20E+06	1.13E+06	1.10E+06	1.13E+06	1.13E+06	1.13E+06	1.13E+06
V5/1	2.33E+05	5.33E+05	8.00E+05	8.67E+05	9.00E+05	9.33E+05	9.00E+05	8.33E+05	8.33E+05	8.33E+05
V6/1	1.33E+05	2.00E+05	2.67E+05	2.67E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05

Forest in dry season

	Colony Forming Unit (CFU · g^{-1})									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10
F1/1	2.33E+05	7.00E+05	8.00E+05	7.67E+05	7.33E+05	8.00E+05	8.33E+05	8.67E+05	8.67E+05	8.67E+05
F2/1	0.00E+00	3.33E+05	3.33E+05	3.33E+05	3.33E+05	3.67E+05	3.67E+05	4.00E+05	4.00E+05	4.00E+05
F3/1	8.33E+05	1.80E+06	1.87E+06	1.97E+06	2.07E+06	2.10E+06	2.07E+06	2.07E+06	2.07E+06	2.07E+06
F4/1	4.33E+05	8.00E+05	8.67E+05	8.67E+05	8.33E+05	8.00E+05	8.00E+05	8.00E+05	8.00E+05	8.00E+05
F5/1	3.33E+04	5.33E+05	7.00E+05	6.33E+05	8.33E+05	8.00E+05	8.00E+05	8.67E+05	8.67E+05	8.67E+05
F6/1	2.67E+05	6.67E+05	7.33E+05	7.67E+05	7.33E+05	7.33E+05	7.33E+05	7.33E+05	7.33E+05	7.33E+05

Chemically-intensive farm in wet season

	Colony Forming Unit (CFU · g^{-1})									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10
D1/2	4.67E+05	7.67E+05	8.00E+05	8.33E+05	9.67E+05	9.67E+05	9.67E+05	9.67E+05	8.00E+05	8.00E+05
D2/2	1.00E+05	2.67E+05	3.33E+05	3.33E+05	3.33E+05	3.33E+05	3.33E+05	3.33E+05	3.33E+05	3.33E+05
D3/2	5.33E+05	6.00E+05	6.00E+05	6.33E+05	7.00E+05	7.00E+05	7.00E+05	7.00E+05	7.00E+05	7.00E+05
D4/2	4.00E+05	1.17E+06	1.20E+06	1.20E+06	1.23E+06	1.23E+06	1.23E+06	1.23E+06	1.23E+06	1.23E+06
D5/2	1.67E+05	2.67E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05
D6/2	3.67E+05	9.33E+05	9.33E+05	1.00E+06	1.03E+06	1.10E+06	1.10E+06	1.10E+06	1.10E+06	1.10E+06

Organic farm in wet season

	Colony Forming Unit (CFU · g^{-1})									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10
V1/2	3.33E+05	4.67E+05	5.33E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05	5.67E+05
V2/2	2.00E+05	3.67E+05	4.00E+05	4.00E+05	4.00E+05	4.33E+05	5.33E+05	5.33E+05	5.33E+05	5.67E+05
V3/2	2.00E+05	3.00E+05	3.33E+05	3.33E+05	4.00E+05	4.00E+05	4.00E+05	4.00E+05	4.00E+05	4.00E+05
V4/2	6.33E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05
V5/2	2.00E+05	4.00E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05
V6/2	2.00E+05	3.67E+05	4.33E+05	4.33E+05	4.67E+05	4.67E+05	4.67E+05	4.67E+05	4.67E+05	4.67E+05

Forest in wet season

	Colony Forming Unit (CFU · g^{-1})									
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10
F1/2	4.00E+05	9.33E+05	1.00E+06	1.17E+06	1.27E+06	1.27E+06	1.27E+06	1.27E+06	1.27E+06	1.27E+06
F2/2	3.00E+05	7.67E+05	8.00E+05	8.00E+05	8.33E+05	8.33E+05	9.33E+05	9.33E+05	9.33E+05	9.33E+05
F3/2	2.33E+05	4.67E+05	5.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05	6.67E+05
F4/2	6.33E+05	7.00E+05	7.00E+05	8.00E+05	8.33E+05	8.33E+05	8.33E+05	8.33E+05	8.33E+05	8.33E+05
F5/2	4.00E+05	7.67E+05	9.00E+05	9.67E+05	9.67E+05	9.67E+05	9.67E+05	9.67E+05	9.67E+05	9.67E+05
F6/2	1.50E+06	2.00E+06	2.10E+06	2.30E+06	2.33E+06	2.43E+06	2.43E+06	2.43E+06	2.43E+06	2.37E+06

Ecophysiological index (EPI)

	Dry season			Wet season		
	Chemically-intensive farm	Organic farm	Forest	Chemically-intensive farm	Organic farm	Forest
Plot1	0.684	0.897	0.417	0.492	0.319	0.514
Plot2	0.000	0.565	0.505	0.814	0.766	0.446
Plot3	0.495	0.998	0.323	0.244	0.954	0.369
Plot4	0.690	0.422	0.359	0.205	0.245	0.252
Plot5	1.241	0.482	0.439	0.602	0.530	0.430
Plot6	0.725	0.653	0.359	0.343	0.300	0.307

Colony forming unit (CFU) counts of soil bacterial populations grown on nutrient agar plate, presented as average ± standard error (n=6).

Season	Study site	Total cell counts
Dry season	Chemically-intensive farm	5.40 (±3.78) × 10^5 CFU·g^{-1}
	Organic farm	5.56 (±3.66) × 10^5 CFU·g^{-1}
	Forest	7.33 (±1.94) × 10^5 CFU·g^{-1}
Wet season	Chemically-intensive farm	7.44 (±3.84) × 10^5 CFU·g^{-1}
	Organic farm	5.17 (±1.01) × 10^5 CFU·g^{-1}
	Forest	9.33 (±2.20) × 10^5 CFU·g^{-1}

Ecophysiological index (EPI) values of soil bacterial populations grown on nutrient agar plate, presented as average ± standard error (n=6).

Season	Study site	EPI values
Dry season	Chemically-intensive farm	(0.639 ± 0.164)
	Organic farm	(0.669 ± 0.094)
	Forest	(0.401 ± 0.027)
Wet season	Chemically-intensive farm	(0.450 ± 0.095)
	Organic farm	(0.519 ± 0.117)
	Forest	(0.386 ± 0.039)

Appendix 3 – rDNA Sequences

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Appendix 4 – Percentages of each bacterial group

Abundance of rDNA clones of different bacteria group. Phylogenetic distribution of 16S rRNA genes amplified from DNA extracted from 3 different soils.

Bacterial group	Percentage
Unidentified	57.14
Firmicutes	12.86
Actinobacteria	8.57
α- Proteobacteria	8.57
β- Proteobacteria	2.86
γ- Proteobacteria	7.14
Bacteriodes	1.43
Planctomycetes	1.43

Abundance of rDNA clones of different bacteria group. Phylogenetic distribution of 16S rRNA genes amplified from DNA extracted from each different soils, presented as the percentage.

Bacterial group	Chemically-intensive farm	organic farm	Forest
Unidentified	60.87	43.48	66.67
Firmicutes	4.35	21.74	12.5
Actinobacteria	17.39	8.7	0
α- Proteobacteria	13.04	8.7	4.17
β- Proteobacteria	4.35	0	4.17
γ- Proteobacteria	0	13.04	8.33
Bacteriodes	0	4.35	0
Planctomycetes	0	0	4.17

Abundance of rDNA clones of different bacteria group. Phylogenetic distribution of 16S rRNA genes amplified from DNA extracted from 3 different soils in each season, presented as the percentage.

Bacterial Group	Dry season			Wet season		
	Chemical. Farm	Organic Farm	Forest	Chemical. Farm	Organic Farm	Forest
Unidentified	63.64	33.33	75	58.33	54.55	58.33
Firmicutes	0	16.67	0	8.33	27.27	25
Actinobacteria	18.18	8.33	0	16.67	9.09	8.33
α- Proteobacteria	18.18	16.67	0	8.33	0	8.33
β- Proteobacteria	0	0	8.33	8.33	0	0
γ- Proteobacteria	0	25	8.33	0	0	0
Bacteriodes	0	0	0	0	9.09	0
Planctomycetes	0	0	8.33	0	0	0
Total	100	100	100	100	100	100
Cloned numbers	11	12	12	12	11	12

VITAE

Miss Araya Konthikamee was born on May 22, 1982 in Bangkok, Thailand. She graduated with a Bachelor of Science in Biology, from the Department of Biology, Chulalongkorn University, Bangkok, Thailand in 2004. She graduated in Master of Science in Zoology in 2007 from the Department of Biology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand. During the course of study, she obtained financial supports from Graduate School Chulalongkorn University, BRT-Master Thesis Grants, Thailand and the Thai government budget 2007, under the Research Program on Conservation and Utilization of Biodiversity and the Center of Excellence in Biodiversity, Faculty of Science, Chulalongkorn University.