

Physiochemical properties of soil 0-15cm (Top Soil)

Appendix-4.6

PARAMETERS	UNIT	IND/SS1	IND/SS2	IND/SS3	IND/SS4	IND/SS5	IND/SS6	IND/SS7	IND/CTRL 1	IND/CTRL 2
Depth	Cm	0 - 15	0 - 15	0 - 15	0 - 15	0 - 15	0 - 15	0 - 15	0 - 15	0 - 15
pH		5.20	4.70	5.60	5.40	5.60	4.80	5.20	4.80	5.30
Porosity	% pore space	51.40	50.40	43.80	49.20	52.40	53.20	50.40	42.80	50.90
Permeability	(K-4 cm/hr)	2.1	1.7	1.7	2.1	2.1	1.7	1.7	1.9	1.6
Bulk Density	(g/cm)	0.25	0.25	0.28	0.20	0.25	0.15	0.25	0.22	0.20
Moisture Content	%	0.55	1.15	0.71	0.5	0.24	0.45	0.71	0.72	0.42
Electrical conductivity	(μ S/cm)	83	128.2	172.2	101.8	117.1	48.2	128.2	124.60	39.40
Phosphorous	(%)	0.13	0.16	0.16	0.28	0.19	0.17	0.16	0.14	0.12
Total nitrogen	(%)	0.248	0.152	0.14	0.08	0.139	0.389	0.24	0.126	0.163
CEC	(Cmol/kg)	1.06	1.32	1.04	0.87	0.81	1.14	1.06	1.21	1.04
SO ₄ ²⁻	(ppm)	2.703	3.306	3.525	7.254	5.335	4.677	3.606	8.661	2.757
NO ₃ - N	(ppm)	0.074	0.048	0.152	0.182	0.16	0.074	0.074	0.065	0.048
NH ₄ - N	(ppm)	0.306	0.239	0.476	0.519	0.523	0.158	0.158	0.178	0.189
O & G	(ppm)	1.62	1.28	1.38	1.55	1.35	6.16	1.38	2.31	0.68
TOC	%	0.12	0.11	0.08	0.13	0.04	0.11	0.13	0.25	0.26
OM	%	0.19	0.18	0.16	0.21	0.09	0.18	0.09	0.39	0.33
Exc. Acidity	(meq/100g)	1.00	1.20	0.90	0.80	0.70	1.10	0.70	1.1	1.0
Base Saturation	%	5.96	9.30	13.79	8.42	13.12	3.85	13.79	9.40	3.44
Total sand	%	77.0	70.1	68.6	64.5	67.2	66.9	67.2	76.5	66.7
Total silt	%	9.2	6.4	7.7	9.1	5.8	10.1	5.8	1.3	21.4
Total clay	%	13.8	23.5	23.7	26.4	27.0	23.0	23.5	22.2	11.9
TEXTURE		LOAMY SAND	SANDY LOAM	SANDY LOAM	SANDY LOAM	SANDY LOAM	SANDY LOAM	SANDY LOAM	LOAMY SAND	SANDY LOAM

PARAMETERS	UNIT	IND/SS1	IND/SS2	IND/SS3	IND/SS4	IND/SS5	IND/SS6	IND/SS7	IND/CTRL 1	IND/CTRL 2
CATIONS										
Ca	(mg/kg)	0.794	0.671	1.076	0.945	1.295	0.631	0.671	0.859	0.719
Mg	(mg/kg)	0.497	1.881	3.613	0.355	3.258	2.213	1.881	1.631	0.120
Na	(mg/kg)	10.707	21.769	22.505	14.410	14.456	4.611	10.707	21.264	6.314
K	(mg/kg)	3.404	3.650	4.151	1.251	3.601	0.952	4.151	1.501	1.400
HEAVY METALS										
V	(mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ni	(mg/kg)	14.418	13.295	12.134	7.812	14.652	17.324	13.295	13.569	13.377
Fe	(mg/kg)	6112.01	5931.95	6459.12	6625.18	8592.83	7362.42	6459.12	3709.22	4468.47
Pb	(mg/kg)	38.68	43.63	42.94	38.14	51.16	46.01	38.14	38.92	38.17
Cu	(mg/kg)	11.311	7.708	7.057	9.760	8.809	8.409	7.057	5.906	5.806
Zn	(mg/kg)	61.564	74.977	69.772	80.383	70.673	60.663	70.673	72.275	70.973
Cd	(mg/kg)	5.313	8.595	7.423	8.234	8.895	8.835	7.423	8.925	2.675
Cr	(mg/kg)	0.658	1.183	0.562	1.252	0.609	0.398	0.658	0.119	0.619
Hg	(mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MICROBIOLOGY										
THB	cfu/g X 10 ⁴	1.88	3.80	3.26	4.50	1.88	0.52	3.80	1.00	1.61
THF	cfu/g X 10 ⁴	0.92	0.27	1.15	1.05	1.59	0.15	0.92	0.45	0.23
HUB	cfu/g X 10 ⁴	0.42	0.62	1.96	0.40	0.81	0.25	0.40	0.20	1.45
HUF	cfu/g X 10 ³	1.06	1.50	1.80	3.00	0.64	1.00	0.64	2.00	0.38
Total Coliform	cfu/g X 10 ⁴	1.2	1.24	1.1	1.31	1.23	0.95	0.85	1.34	1.26

Physiochemical properties of soil 15-30cm (Sub-Soil)

PARAMETERS	UNIT	IND/SS1	IND/SS2	IND/SS3	IND/SS4	IND/SS5	IND/SS6	IND/SS7	IND/CTRL 1	IND/CTRL 2
Depth	Cm	15 - 30	15 - 30	15 - 30	15 - 30	15 - 30	15 - 30	15 - 30	15 - 30	15 - 30
pH		4.90	4.30	6.10	5.80	6.80	4.30	6.10	5.50	5.50
Porosity	% pore space	53.80	47.50	44.00	51.50	51.30	56.08	47.50	52.30	57.40
Permeability	(K-4 cm/hr)	1.9	1.6	1.9	2.0	1.8	1.7	1.6	2	1.9
Bulk Density	(g/cm)	0.33	0.28	0.33	0.20	0.20	0.18	0.33	0.28	0.26
Moisture Content	%	0.44	0.26	0.45	0.45	0.51	0.34	0.44	0.16	0.15
Electrical Conductivity	(μ S/cm)	41.1	116.6	121.7	43	103.9	44.50	43	38.30	34.50
Phosphorous	(%)	0.16	0.32	0.28	0.18	0.2	0.14	0.16	0.22	0.19
Total Nitrogen	(%)	0.156	0.082	0.145	0.274	0.208	0.152	0.082	0.068	0.120
CEC	(Cmol/kg)	1.23	1.49	0.8	0.74	0.7	1.24	0.74	1.04	0.93
SO ₄ ²⁻	(ppm)	2.922	5.445	6.651	7.309	6.103	5.554	6.651	1.648	2.432
NO ₃ - N	(ppm)	0.095	0.043	0.087	0.056	0.217	0.078	0.087	0.056	0.087
NH ₄ - N	(ppm)	0.33	0.281	0.456	0.34	0.466	0.117	0.281	0.176	0.268
O & G	(ppm)	<0.01	<0.01	0.92	<0.01	0.98	1.52	0.92	<0.01	<0.01
TOC	%	0.05	0.09	0.06	0.05	0.03	0.08	0.03	0.04	0.07
OM	%	0.16	0.15	0.11	0.08	0.09	0.12	0.11	0.07	0.12
Exc. Acidity	(meq/100g)	1.20	1.40	0.70	0.70	0.60	1.2	0.60	1	0.9
Base Saturation	%	2.64	6.16	11.97	4.80	13.85	3.40	2.64	3.39	2.88
TOTAL SAND	%	72.2	70.1	59.5	58.8	64.4	65.9	59.5	71.1	75.9
Total silt	%	7.0	6.1	7.9	6.8	7.0	7.6	6.1	5.4	5.7
Total clay	%	20.8	23.8	32.6	34.4	28.6	26.5	20.8	23.5	18.4
Texture		LOAMY SAND	SANDY LOAM	SANDY CLAY LOAM	SANDY CLAY LOAM	SANDY LOAM	SANDY LOAM	SANDY CLAY LOAM	LOAMY SAND	LOAMY SAND

PARAMETERS	UNIT	IND/SS1	IND/SS2	IND/SS3	IND/SS4	IND/SS5	IND/SS6	IND/SS7	IND/CTRL 1	IND/CTRL 2
CATIONS										
Ca	(mg/kg)	0.599	0.497	0.707	1.212	0.608	0.670	0.497	0.881	0.530
Mg	(mg/kg)	0.337	0.417	1.549	0.761	2.272	1.472	0.417	0.592	0.167
Na	(mg/kg)	5.460	18.059	17.462	4.460	15.662	5.655	4.460	5.063	4.657
K	(mg/kg)	1.153	2.901	1.101	1.351	2.502	0.801	1.101	1.451	0.933
HEAVY METALS										
V	(mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ni	(mg/kg)	14.791	14.184	17.273	10.917	13.543	13.349	14.910	17.283	15.621
Fe	(mg/kg)	7827.580	6306.070	6106.010	8401.760	7466.460	4003.320	8401.760	2915.960	2023.670
Pb	(mg/kg)	46.210	45.110	44.730	31.030	32.050	48.740	45.110	40.590	38.280
Cu	(mg/kg)	10.411	7.808	7.408	8.609	7.958	5.155	7.408	3.954	5.005
Zn	(mg/kg)	66.469	55.457	67.470	78.581	63.165	52.955	67.470	52.254	62.765
Cd	(mg/kg)	8.595	8.564	8.564	6.281	8.354	8.564	8.354	4.838	2.825
Cr	(mg/kg)	0.116	1.993	1.066	3.781	0.669	0.817	1.066	0.189	0.561
Hg	(mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MICROBIOLOGY										
THB	cfu/g X 10 ⁴	1.50	3.94	3.95	2.45	2.50	1.54	3.94	2.03	0.85
THF	cfu/g X 10 ⁴	0.87	0.83	1.20	0.61	2.00	0.45	1.20	0.94	0.12
HUB	cfu/g X 10 ⁴	0.37	1.34	0.50	1.99	1.25	1.20	0.37	0.27	NIL
HUF	cfu/g X 10 ³	2.00	1.12	3.50	0.35	2.50	0.22	1.12	1.21	0.5
Total Coliform	cfu/g X 10 ⁴	0.5	0.31	0.41	0.39	0.45	0.42	0.36	0.41	0.46