



**2007 North American Proficiency Testing Program
1st Quarter Report - May 14, 2007**

Laboratory ID

Soil Analysis	Units	n	Soil 2007-101			Soil 2007-102			Soil 2007-103			Soil 2007-104			Soil 2007-105		
			Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}
Salinity																	
Sat. Paste Moisture	%	33	26.0	1.32		42.0	2.75		35.0	2.03		49.0	3.80		40.4	3.95	
pH - sp	Unit	39	5.41	0.19		7.40	0.17		4.58	0.220		7.88	0.150		7.40	0.105	
ECe - sp	dS/m	44	0.95	0.120		0.42	0.026		2.97	0.245		3.54	0.310		0.42	0.030	
HCO ₃ - sp	mmol/L	15	0.70	0.285		2.52	0.422		0.400	0.240		7.96	1.18		3.23	0.870	
Ca - sp	mmol/L	34	4.19	0.735		2.79	0.376		21.0	2.45		3.94	0.460		2.62	0.440	
Mg - sp	mmol/L	34	2.50	0.296		1.10	0.170		6.07	0.610		3.07	0.320		1.44	0.162	
Na - sp	mmol/L	35	2.00	0.267		0.344	0.165		0.530	0.180		23.9	2.59		0.520	0.225	
SAR - sp	value	30	1.16	0.142		0.250	0.130		0.145	0.050		12.6	0.750		0.360	0.143	
Cl - sp	mmol/L	22	2.33	0.295		0.173	0.063		0.649	0.101		11.9	1.20		0.320	0.126	
SO ₄ - sp	mmol/L	22	0.795	0.215		0.245	0.055		0.885	0.185		5.36	0.961		0.455	0.085	
NO ₃ - sp	mmol/L	19	2.70	2.223		0.820	0.530		11.1	9.61		9.21	3.58		0.165	0.156	
B - sp	mg/L	14	0.140	0.040		0.110	0.030		0.087	0.045		1.77	0.210		0.085	0.035	
Soil pH & EC																	
Soil EC (1:1)	(dS/m)	33	0.24	0.05		0.28	0.05		0.75	0.10		1.23	0.19		0.25	0.03	
Soil EC (1:2)	(dS/m)	51	0.17	0.03		0.17	0.03		0.55	0.09		0.88	0.13		0.15	0.03	
pH (1:1) Water	Unit	92	5.60	0.10		7.80	0.10		4.70	0.10		8.40	0.10		7.69	0.06	
pH (1:2) Water	Unit	38	5.70	0.11		7.83	0.16		4.77	0.10		8.60	0.10		7.70	0.12	
pH (1:1) 0.01M CaCl ₂	Unit	22	5.10	0.08		7.30	0.13		4.41	0.09		7.98	0.11		7.14	0.14	
pH (1:2) 0.01M CaCl ₂	Unit	11	5.20	0.10		7.26	0.06		4.52	0.12		7.92	0.09		7.16	0.11	
Buffer pH, Lime Req.																	
SMP Buffer pH	Unit	68	6.85	0.10		7.34	0.07		6.60	0.10		7.54	0.04		7.30	0.04	
Adams-Evans Buf pH	Unit	12	7.61	0.06		7.62	0.03		7.50	0.06		7.80	0.05		7.67	0.07	
Woodruff Buf. pH	Unit	22	6.65	0.05		7.03	0.04		6.46	0.11		7.15	0.05		7.00	0.06	
Mehlich Buffer pH	Unit	7	6.15	0.08		6.71	0.03		6.02	0.13		6.90	0.07		6.68	0.01	
Titrateable Acidity	cmol/kg	2	2.52	2.40					3.74	3.44							

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			Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}
Inorganic Nitrogen (NO3-N & NH4-N)																	
NO3-N Cd. Rd.	mg/kg	71	23.0	2.22		9.50	0.90		140	9.90		80.7	6.42		9.13	0.87	
NO3-N ISE	mg/kg	19	22.2	3.94		9.40	2.00		122	20.5		81.7	16.7		8.44	1.66	
NO3-N CTA	mg/kg	5	23.6	0.85		9.60	1.20		136	9.12		87.5	2.10		9.90	0.60	
NO3-N Ion Chr.	mg/kg	2	24.3	1.85		16.0	7.04		137	9.00		91.8	4.75		9.77	0.73	
NO3-N Other _____	mg/kg	12	21.9	5.20		9.50	2.00		134	23.0		72.2	13.5		9.55	1.60	
NH4 - N (KCl Extr.)	mg/kg	61	11.3	1.70		3.00	0.70		3.84	0.68		10.0	1.43		2.98	0.58	
Phosphorus and Sulfur																	
PO4-P Bray P (1:10)	mg/kg	53	79.0	8.00		70.0	4.90		45.1	3.43		85.0	19.0		65.0	6.20	
PO4-P Bray P1 (1:7)	mg/kg	8	62.0	5.50		49.0	4.50		40.0	2.50		81.0	20.8		53.5	5.50	
PO4-P Olsen/Bicarb	mg/kg	63	38.4	4.32		39.0	3.25		23.3	2.70		94.7	10.9		40.0	2.00	
PO4-P AB-DTPA	mg/kg	2	25.1	7.43		15.7	2.24		14.3	5.10		90.5	20.0		19.5	4.11	
PO4-P M. Morgan	mg/kg	8	8.70	1.80		27.9	3.59		5.36	1.25		186	29.5		19.2	1.65	
PO4-P Mod. Kewlona	mg/kg	5	49.0	4.00		56.0	1.67		35.0	1.20		181	17.0		55.0	1.04	
PO4-P Stong Bray (1:10)	mg/kg	13	263	32.5		425	80.0		61.0	11.0		347	64.0		400	64.0	
PO4-P Water Soluble	mg/kg	4	3.00	1.65		2.95	1.84		0.57	0.13		18.9	13.1		3.03	1.95	
SO4 - S (PO4 Extr.)	mg/kg	44	5.00	1.85		3.45	1.60		10.2	1.94		39.9	5.08		5.00	1.82	
Bases																	
K Ammonium Acetate	mg/kg	97	181	19.7		570	35.8		156	10.5		5884	955.9		450	32	
Ca Ammonium Acetate	mg/kg	90	985	116		3419	229		938	62.0		3788	540		2804	189	
Mg Ammonium Acetate	mg/kg	92	224	29.0		546	37.4		112	9.9		604	56.5		559	41.3	
Na Ammonium Acetate	mg/kg	72	40.0	7.65		18.0	6.00		14.7	6.24		1465.5	189.74		23	8.5	
Bray Extractable K	mg/kg	3	163	0.0		391	0.0		138	5.0		2517	274		301	18.0	
K- Bicarb.	mg/kg	7	142	6.0		325	4.0		160	6.0		4069	667		311	8.0	
K Modified Morgan	mg/kg	6	122	9.5		242	17.5		136	7.0		2958	125		255	44.0	
Ca Modified Morgan	mg/kg	3	974	96.0		3614	46.0		940	38.0		16892	573		3105	108	
Aluminum KCL Extr.	mg/kg	5	4.40	2.03		1.00	0.30		20.8	2.38		0.95	0.50		0.76	0.35	

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Mehlich-1 Multi Element (scoop)																	
Scoop Soil Mass	g	8	5.00	0.00		5.00	0.00		5.00	0.00		5.00	0.00		5.00	0.00	
P	mg/kg	8	202	28.9		263	44.2		29.8	6.94		103	16.9		297	54.2	
K	mg/kg	8	125	12.7		252	29.9		125	13.7		764	60.1		277	72.6	
Ca	mg/kg	8	1209	58.1		3822	457		903	75.7		4497	597		3326	353	
Mg	mg/kg	8	207	16.5		562	74.9		114	11.0		502	64.2		545	69.1	
Mn	mg/kg	7	27.0	1.58		29.1	5.06		38.0	3.66		2.00	0.19		36.4	4.20	
Zn	mg/kg	7	5.13	0.30		1.28	0.26		1.14	0.20		0.10	0.10		4.23	0.61	
Mehlich-3 Multi-Element (scoop)																	
Scoop Soil Mass	g	27	2.50	0.50		2.03	0.50		2.00	0.24		1.73	0.27		2.00	0.34	
Assumed Density	g/cm ³	19	1.18	0.00		1.18	0.00		1.18	0.00		1.18	0.00		1.18	0.00	
Volume of Scoop	cm ³	32	2.00	0.50		2.00	0.50		2.00	0.50		2.00	0.50		2.00	0.50	
Extractant Volume mL	mL	34	20.0	0.00		20.0	0.00		20.0	0.00		20.0	0.00		20.0	0.00	
P Colorimetric	mg/kg	24	81.6	11.6		93.5	6.71		47.2	2.50		223	28.5		79.8	3.00	
P ICP-AES	mg/kg	43	95.0	6.60		98.5	9.81		58.5	3.99		239	14.2		86.0	7.00	
K	mg/kg	51	189	15.7		589	26.1		160	10.4		5416	425		469	31.8	
Ca	mg/kg	49	1056	133		3768	250		988	62.0		5906	294		3063	199	
Mg	mg/kg	49	251	25.4		655	45.0		125	10.0		873	53.0		638	45.0	
Na	mg/kg	32	42.3	4.70		16.8	3.80		13.0	3.89		1424	91.1		24.0	7.35	
S	mg/kg	33	10.7	2.52		9.89	3.49		20.0	2.40		61.8	6.75		11.0	3.00	
Al	mg/kg	24	460	46.1		794	71.9		727	47.0		263	65.8		700	61.5	
Zn	mg/kg	41	5.88	0.66		3.10	0.30		1.50	0.30		5.54	0.53		7.40	0.80	
Mn	mg/kg	39	31.0	3.4		251	25.0		46.0	3.20		177	14.5		230	22.0	
Fe	mg/kg	36	287	30.6		110	16.6		191	17.7		41.0	4.52		125	14.5	
Cu	mg/kg	40	1.00	0.15		4.35	0.25		1.50	0.17		2.80	0.28		4.30	0.30	
B	mg/kg	31	0.50	0.20		1.47	0.19		0.37	0.16		10.0	0.94		0.99	0.18	

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Micronutrients																	
Zn - DTPA	mg/kg	82	3.48	0.39		1.20	0.10		0.97	0.09		1.94	0.16		3.15	0.28	
Mn - DTPA	mg/kg	68	18.5	2.04		12.7	2.25		36.1	2.80		13.5	2.44		18.0	2.78	
Fe - DTPA	mg/kg	70	91.5	14.6		16.9	2.18		75.3	10.9		4.00	0.66		21.4	2.15	
Cu - DTPA	mg/kg	71	0.74	0.11		1.52	0.15		1.07	0.11		1.44	0.14		1.40	0.17	
Zn - HCl	mg/kg	5	6.80	0.20		3.10	0.11		1.42	0.02		1.20	0.57		7.34	0.78	
Mn-H3PO4	mg/kg	10	18.4	1.16		19.4	1.40		30.4	2.23		3.35	0.92		24.4	1.85	
Cl - Ca(NO3)2 Extr.	mg/kg	22	22.0	3.79		2.25	1.31		7.94	1.82		164	18.7		4.65	2.30	
B - Hot Wat.	mg/kg	48	0.25	0.05		0.70	0.20		0.25	0.08		4.50	1.22		0.47	0.20	
B-DTPA/Sorbitol	mg/kg	10	0.13	0.06		0.75	0.08		0.19	0.05		6.30	0.51		0.44	0.05	
Soil Organic Matter																	
Soil Kjeldahl N	%	27	0.082	0.006		0.120	0.010		0.110	0.009		0.190	0.011		0.130	0.010	
Soil TN (combustion)	%	37	0.082	0.008		0.120	0.007		0.110	0.009		0.195	0.011		0.133	0.007	
Soil TOC (Combustion)	%	28	0.750	0.030		1.30	0.052		1.02	0.039		2.70	0.09		1.53	0.04	
SOM - Walkley-Black	%	47	1.45	0.145		2.11	0.295		1.80	0.200		3.32	0.24		2.69	0.21	
SOM - LOI (% Wt loss)	%	82	1.62	0.105		2.80	0.200		2.20	0.115		4.25	0.34		2.96	0.23	
CaCO3 Content	%	11	0.49	0.345		0.93	0.445		0.200	0.143		7.02	1.02		0.72	0.369	
CEC - Cation Displacement	cmol/kg	25	8.49	0.92		24.6	2.32		9.08	1.35		33.9	5.20		22.8	2.95	
CEC - Estimation	cmol/kg	18	9.00	1.83		23.6	1.65		9.15	2.25		48.7	6.54		20.6	0.85	
Soil Density (Scoop)	g/cc	15	1.50	0.06		1.17	0.05		1.13	0.06		0.99	0.06		1.17	0.05	
Particle Size Analysis																	
Sand 2000 - 50 um	%	45	80.0	2.00		18.0	3.40		32.2	2.20		24.0	3.10		18.0	3.61	
Silt 50 - 2 um	%	45	15.0	2.10		57.0	5.43		53.2	2.61		55.0	4.51		56.1	3.10	
Clay 2 - 0 um	%	45	6.0	2.00		25.5	3.50		14.0	2.09		21.0	4.00		24.9	3.60	

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