



2007 North American Proficiency Testing Program 2nd Quarter Report - July 10, 2007

Laboratory ID

Soil Analysis	Units	n	Soil 2007-106			Soil 2007-107			Soil 2007-108			Soil 2007-109			Soil 2007-110		
			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	%	30	41.7	1.81		27.0	0.98		26.2	0.91		44.8	2.83		42.3	4.00	
pH - sp	Unit	37	5.96	0.14		5.89	0.15		5.39	0.19		7.59	0.14		7.80	0.17	
ECe - sp	dS/m	38	0.44	0.09		0.43	0.07		0.93	0.13		0.59	0.08		0.72	0.07	
HCO ₃ - sp	mmolc/L	12	1.43	0.366		1.02	0.255		0.70	0.129		5.13	1.15		5.74	1.36	
Ca - sp	mmolc/L	32	1.70	0.240		1.36	0.225		3.84	0.655		5.11	0.820		3.42	0.680	
Mg - sp	mmolc/L	32	1.00	0.164		0.745	0.125		2.38	0.298		1.28	0.243		1.24	0.180	
Na - sp	mmolc/L	33	0.530	0.157		0.205	0.085		1.96	0.274		0.290	0.120		3.34	0.322	
SAR - sp	value	29	0.450	0.135		0.218	0.082		1.09	0.110		0.180	0.060		2.08	0.140	
Cl - sp	mmolc/L	17	0.508	0.153		0.302	0.098		2.37	0.320		0.290	0.060		0.780	0.119	
SO ₄ - sp	mmolc/L	18	0.662	0.117		0.485	0.106		0.715	0.144		0.327	0.083		1.10	0.129	
NO ₃ - sp	mmolc/L	15	1.71	1.22		1.86	0.745		5.16	1.201		0.041	0.041		0.143	0.141	
B - sp	mg/L	13	0.070	0.019		0.060	0.018		0.120	0.020		0.090	0.010		0.303	0.043	
Soil pH & EC																	
Soil EC (1:1)	(dS/m)	27	0.18	0.06		0.13	0.03		0.25	0.06		0.33	0.05		0.34	0.04	
Soil EC (1:2)	(dS/m)	51	0.15	0.02		0.09	0.02		0.17	0.03		0.23	0.02		0.23	0.03	
pH (1:1) Water	Unit	81	5.94	0.06		6.00	0.10		5.60	0.08		8.00	0.10		8.27	0.08	
pH (1:2) Water	Unit	30	5.97	0.13		6.04	0.13		5.61	0.11		8.00	0.11		8.36	0.09	
pH (1:1) 0.01M CaCl ₂	Unit	22	5.38	0.11		5.34	0.06		5.07	0.06		7.50	0.12		7.65	0.12	
pH (1:2) 0.01M CaCl ₂	Unit	11	5.31	0.12		5.32	0.08		5.03	0.09		7.45	0.09		7.60	0.10	
Buffer pH, Lime Req.																	
SMP Buffer pH	Unit	57	6.49	0.09		6.80	0.08		6.84	0.06		7.50	0.04		7.50	0.06	
Adams-Evans Buf pH	Unit	13	7.32	0.06		7.61	0.03		7.60	0.04		7.78	0.04		7.78	0.04	
Woodruff Buf. pH	Unit	23	6.43	0.06		6.59	0.08		6.64	0.08		7.10	0.05		7.10	0.03	
Mehlich Buffer pH	Unit	7	6.02	0.06		6.25	0.05		6.23	0.04		6.91	0.05		6.82	0.03	
Titrateable Acidity	cmol/kg	0															

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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	63	19.0	1.48		11.2	1.30		24.0	2.70		6.65	0.68		10.7	1.07	
NO3-N ISE	mg/kg	18	16.3	2.72		11.0	2.00		22.3	3.14		11.0	5.00		14.3	4.63	
NO3-N CTA	mg/kg	5	21.8	1.09		12.2	1.45		23.8	1.27		8.60	1.00		12.0	0.52	
NO3-N Ion Chr.	mg/kg	2	20.4	0.85		10.9	0.91		24.1	1.05		6.80	0.140		12.6	1.70	
NO3-N Other _____	mg/kg	10	17.1	3.65		9.84	1.80		21.4	3.85		6.05	1.71		9.46	2.44	
NH4 - N (KCl Extr.)	mg/kg	51	4.87	0.90		7.60	1.38		10.9	1.32		4.60	0.79		7.50	0.91	
Phosphorus and Sulfur																	
PO4-P Bray P (1:10)	mg/kg	49	140	21.1		125	14.0		80.0	6.13		2.60	1.09		28.0	4.30	
PO4-P Bray P1 (1:7)	mg/kg	7	102	7.0		111	19.0		63.0	3.90		1.00	0.646		23.0	3.00	
PO4-P Olsen/Bicarb	mg/kg	53	47.0	5.45		33.7	4.30		39.0	3.80		14.4	1.45		16.0	2.00	
PO4-P AB-DTPA	mg/kg	2	41.9	24.9		39.2	22.7		31.1	14.9		9.00	2.80		13.6	3.40	
PO4-P Modified Morgan	mg/kg	4	6.52	0.75		6.58	0.58		8.29	0.24		16.9	5.30		27.1	3.03	
PO4-P True Morgan	mg/kg	4	6.75	0.70		6.05	0.90		8.85	1.35		9.75	1.45		25.5	2.55	
PO4-P Mod. Kewlona	mg/kg	5	91.1	13.1		91.5	18.5		47.0	4.00		20.5	1.50		34.0	1.85	
PO4-P Stong Bray (1:10)	mg/kg	9	257	10.5		169	11.0		260	38.0		6.00	4.00		176	49.0	
PO4-P Water Soluble	mg/kg	4	1.89	1.24		2.44	1.49		5.82	3.67		1.41	1.06		7.23	4.23	
SO4 - S (PO4 Extr.)	mg/kg	38	12.2	4.10		4.90	1.10		5.00	1.00		5.15	1.95		9.10	2.78	
Bases																	
K Ammonium Acetate	mg/kg	82	337	18.1		167	16.5		183	15.5		387	24.3		2850	433	
Ca Ammonium Acetate	mg/kg	77	811	55.0		368	44.0		968	95.0		4897	750		4527	465	
Mg Ammonium Acetate	mg/kg	78	125	11.0		52.9	9.75		224	25.9		329	27.0		426	44.3	
Na Ammonium Acetate	mg/kg	60	20.0	5.30		11.0	6.40		39.0	7.79		14.8	5.80		441	71.0	
Bray Extractable K	mg/kg	3	282	5.0		164	13.0		163	3.0		281	4.0		1240	5.0	
K- Olsen/Bicarb.	mg/kg	7	318	12.5		150	15.0		134	5.5		291	13.0		2049	26.0	
K Modified Morgan	mg/kg	3	307	4.0		135	3.0		121	7.0		270	25.0		1546	39.0	
K True Morgan	mg/kg	4	282	22.8		136	11.8		125	11.4		233	35.0		1488	123	
Ca Modified Morgan	mg/kg	2	711	2.5		278	1.5		809	96.0		33864	4147		20777	1454	
Aluminum KCL Extr.	mg/kg	5	1.30	0.49		1.00	0.020		2.33	0.333		0.507	0.500		0.600	0.480	

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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	48.4	3.14		47.7	2.52		177	15.5		3.85	0.85		31.3	3.52	
K	mg/kg	8	283	11.0		139	10.3		128	16.9		146	6.3		213	17.4	
Ca	mg/kg	8	989	59.4		408	52.1		1146	123.1		5568	235		5189	256	
Mg	mg/kg	8	131	5.0		58.4	8.0		196	17.4		290	11.5		338	13.3	
Mn	mg/kg	7	22.3	0.90		134	9.1		27.3	1.08		1.70	0.361		1.42	0.290	
Zn	mg/kg	7	3.16	0.13		2.77	0.29		4.81	0.41		0.080	0.060		0.050	0.040	
Mehlich-3 Multi-Element (scoop)																	
Scoop Soil Mass	g	32	2.13	0.13		2.61	0.45		2.53	0.50		2.04	0.14		1.98	0.35	
Assumed Density	g/cm ³	14	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	31	2.00	0.30		2.00	0.30		2.00	0.30		2.00	0.30		2.00	0.30	
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	114	6.8		125	14.5		86.0	12.8		25.8	2.48		50.7	3.65	
P ICP-AES	mg/kg	45	112	11.5		138	9.8		95.3	9.75		28.0	2.89		54.5	4.47	
K	mg/kg	52	337	17.3		171	19.0		187	21.0		411	24.8		2706	267	
Ca	mg/kg	49	929	60.9		438	60.0		1038	126		11250	1450		5797	550	
Mg	mg/kg	49	139	9.8		64.4	8.70		248	25.0		511	30.0		523	43.3	
Na	mg/kg	35	19.1	5.10		10.0	4.27		41.0	5.10		16.0	5.00		414	43.6	
S	mg/kg	34	24.0	3.00		18.3	3.71		11.8	2.70		18.2	4.39		20.9	3.71	
Al	mg/kg	26	1660	130		1090	132		484	80.4		115	34.9		413	88.3	
Zn	mg/kg	41	3.22	0.22		4.20	0.500		6.10	0.470		3.20	0.400		2.44	0.320	
Mn	mg/kg	40	27.2	3.05		176	15.7		34.1	4.00		96.9	8.30		197	20.4	
Fe	mg/kg	37	95.0	10.2		248	26.1		288	31.5		48.0	4.82		39.0	6.00	
Cu	mg/kg	41	1.32	0.16		0.845	0.190		0.964	0.136		2.50	0.300		2.61	0.306	
B	mg/kg	32	0.705	0.172		0.400	0.200		0.400	0.230		1.50	0.180		2.95	0.240	

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Micronutrients																	
Zn - DTPA	mg/kg	73	1.93	0.15		1.53	0.237		3.23	0.385		1.30	0.120		0.840	0.090	
Mn - DTPA	mg/kg	58	9.01	0.82		100	15.0		20.2	2.76		13.1	1.95		6.24	1.86	
Fe - DTPA	mg/kg	60	38.5	5.01		54.2	9.65		85.9	12.6		11.3	1.30		3.00	0.500	
Cu - DTPA	mg/kg	60	0.780	0.080		0.390	0.075		0.700	0.100		1.00	0.115		1.00	0.100	
Zn - HCl	mg/kg	4	3.51	0.12		3.62	0.17		7.79	0.48		0.100	0.005		0.180	0.095	
Mn-H3PO4	mg/kg	10	18.4	1.59		109	9.3		19.3	1.14		2.81	0.42		2.83	0.44	
Cl - Ca(NO3)2 Extr.	mg/kg	20	6.25	1.26		2.62	1.13		23.0	3.99		4.38	1.75		10.0	1.69	
B - Hot Wat.	mg/kg	42	0.510	0.110		0.220	0.060		0.275	0.075		0.580	0.170		1.16	0.400	
B-DTPA/Sorbitol	mg/kg	8	0.200	0.050		0.150	0.040		0.130	0.050		0.883	0.073		1.53	0.155	
Soil Organic Matter																	
Soil Kjeldahl N	%	22	0.217	0.013		0.087	0.006		0.080	0.006		0.140	0.005		0.160	0.007	
Soil TN (combustion)	%	36	0.232	0.015		0.090	0.010		0.080	0.010		0.140	0.009		0.163	0.009	
Soil TOC (Combustion)	%	13	2.59	0.100		1.10	0.043		0.760	0.050		5.15	0.200		2.40	0.111	
Soil Total C (Combustion)	%	18	2.62	0.105		1.09	0.075		0.738	0.043		5.31	0.200		2.44	0.095	
SOM - Walkley-Black	%	41	4.54	0.390		1.97	0.270		1.47	0.160		2.59	0.202		2.60	0.290	
SOM - LOI (% Wt loss)	%	72	5.44	0.235		2.07	0.145		1.70	0.120		2.92	0.215		3.88	0.355	
CaCO3 Content	%	9	0.390	0.290		0.140	0.140		0.377	0.377		22.9	5.10		7.20	1.30	
CEC - Cation Displacement	cmol/kg	24	11.8	1.75		5.21	0.975		8.10	1.15		17.7	2.20		31.8	3.55	
CEC - Estimation	cmol/kg	14	11.9	1.89		5.80	1.45		8.95	1.35		29.9	3.36		37.1	4.59	
Soil Density (Scoop)	g/cc	14	1.21	0.09		1.49	0.080		1.47	0.070		1.16	0.063		0.96	0.032	
Particle Size Analysis																	
Sand 2000 - 50 um	%	44	60.6	2.6		86.0	2.0		80.2	1.8		26.0	3.2		33.0	3.3	
Silt 50 - 2 um	%	44	32.0	2.9		8.0	1.9		14.0	2.0		49.0	4.3		44.7	4.3	
Clay 2 - 0 um	%	44	7.9	1.9		5.3	1.7		6.6	1.6		25.0	4.0		21.0	3.6	

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