



2010 North American Proficiency Testing Program 4th Quarter Report - Jan 26, 2011

Laboratory ID

General

Soil Analysis	Units	n	Soil 2010-116			Soil 2010-117			Soil 2010-118			Soil 2010-119			Soil 2010-120	
			Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD	Lab ^{1,2}	Median	MAD
Salinity																
Sat. Paste Moisture	%	24	61.6	3.87		33.7	1.65		50.7	1.98		42.6	2.65		36.9	2.31
pH - sp	Unit	31	7.890	0.080		5.94	0.15		6.85	0.150		7.40	0.100		5.15	0.150
ECe - sp	dS/m	31	10.030	1.370		2.33	0.26		0.70	0.080		0.825	0.065		0.520	0.050
HCO ₃ - sp	mmolc/L	12	2.67	1.004		3.50	2.35		4.55	1.815		3.14	1.680		1.400	0.612
Ca - sp	mmolc/L	26	24.01	1.936		4.81	0.91		5.4	0.65		5.26	0.318		3.64	0.260
Mg - sp	mmolc/L	26	6.945	0.690		4.18	0.70		0.9	0.09		1.98	0.193		1.668	0.168
Na - sp	mmolc/L	26	100.570	13.020		3.88	0.44		0.3	0.14		1.225	0.185		0.366	0.162
SAR - sp	value	24	24.945	2.143		1.86	0.16		0.16	0.067		0.605	0.067		0.200	0.082
Cl - sp	mmolc/L	20	30.711	2.667		11.8	1.29		0.41	0.143		1.033	0.100		0.339	0.119
SO ₄ - sp	mmolc/L	19	92.160	9.774		5.92	0.56		1.5	0.25		0.92	0.110		1.902	0.142
NO ₃ - sp	mmolc/L	16	5.310	1.505		0.294	0.27		0.20	0.16		1.98	1.230		1.085	0.764
B - sp	mg/L	14	15.300	1.950		0.160	0.07		0.093	0.034		0.095	0.020		0.125	0.040
Soil pH & EC																
Soil EC (1:1)	(dS/m)	30	5.3	0.275		0.658	0.17		0.28	0.052		0.380	0.037		0.230	0.050
Soil EC (1:2)	(dS/m)	41	5.2	0.418		0.480	0.05		0.19	0.030		0.229	0.029		0.144	0.016
pH (1:1) Water	Unit	74	8.0	0.073		6.10	0.05		6.92	0.070		7.53	0.065		5.19	0.083
pH (1:2) Water	Unit	28	8.1	0.070		6.24	0.06		7.03	0.101		7.62	0.125		5.29	0.075
pH (1:1) 0.01M CaCl ₂	Unit	19	7.9	0.085		5.67	0.09		6.52	0.030		7.16	0.090		4.70	0.050
pH (1:2) 0.01M CaCl ₂	Unit	12	8.0	0.090		5.67	0.09		6.48	0.087		7.14	0.085		4.71	0.079
Buffer pH, Lime Req.																
SMP Buffer pH	Unit	35	7.6	0.070		7.06	0.06		7.09	0.090		7.40	0.070		6.20	0.100
Adams-Evans Buf pH	Unit	8	7.8	0.055		7.80	0.02		7.72	0.065		7.72	0.025		7.35	0.100
Woodruff Buf. pH	Unit	22	7.2	0.010		6.78	0.06		6.90	0.040		7.07	0.030		6.13	0.115
Mehlich Buffer pH	Unit	5	6.9	0.030		6.30	0.05		6.52	0.030		6.68	0.040		5.80	0.080
Sikora Buffer pH	Unit	15	7.6	0.050		7.10	0.10		7.13	0.033		7.40	0.050		6.25	0.100
Titrateable Acidity	cmol/kg	0														

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Inorganic Nitrogen (NO3-N & NH4-N)																
NO3-N Cd. Rd.	mg/kg	50	55.4	3.54		7.99	1.00		17.6	1.55		26.2	1.57		10.0	0.97
NO3-N ISE	mg/kg	16	62.0	6.27		9.56	1.48		14.3	2.45		25.1	2.57		10.0	1.79
NO3-N CTA	mg/kg	3	63.8	26.25		10.15	2.15		18.2	2.72		31.7	10.66		12.8	3.31
NO3-N Ion Chr.	mg/kg	0														
NO3-N Other _____	mg/kg	7	58.8	1.00		8.63	0.70		18.3	1.44		27.5	0.78		10.8	0.981
NH4 - N (KCl Extr.)	mg/kg	47	6.0	0.730		29.1	2.39		34.30	3.767		4.4	0.60		6.80	0.800
Phosphorus and Sulfur																
PO4-P Bray P (1:10)	mg/kg	44	50.9	2.10		35.7	3.82		127.8	9.08		29.5	2.46		75.1	4.05
PO4-P Bray P1 (1:7)	mg/kg	6	35.3	3.94		26.0	2.80		90.5	6.56		23.8	2.93		60.1	7.70
PO4-P Olsen/Bicarb	mg/kg	49	20.6	1.80		16.8	1.75		36.4	4.95		12.0	1.00		33.0	2.00
PO4-P AB-DTPA	mg/kg	1	9.3	0.00		9.8	0.00		20.2	0.0		4.8	0.0		11.50	0.00
PO4-P Modified Morgan	mg/kg	3	57.0	5.400		5.50	1.500		14.0	1.00		24.7	2.70		6.90	1.10
PO4-P True Morgan	mg/kg	6	57.7	7.450		5.93	0.275		13.8	0.90		23.2	2.10		7.70	0.315
PO4-P Mod. Kewlona	mg/kg	4	34.5	1.07		18.0	1.79		96.9	7.25		20.8	0.91		57.2	7.10
PO4-P Stong Bray (1:10)	mg/kg	9	320.0	23.3		44.0	3.36		191	7.3		398	21.0		118.3	5.07
PO4-P Water Soluble	mg/kg	3	1.3	0.48		5.08	2.62		4.19	2.970		4.34	2.11		9.27	3.93
SO4 - S (PO4 Extr.)	mg/kg	33	1348.0	514.00		33.8	5.40		13	3		7.0	1.44		11.11	3.49
Bases																
K Ammonium Acetate	mg/kg	70	374.0	27		459	39.3		268	36.8		197	12.0		176	14.0
Ca Ammonium Acetate	mg/kg	69	8380.8	844		605	100.0		1700	175		2899	168.3		1388	119.2
Mg Ammonium Acetate	mg/kg	69	540.0	38.0		133	17.0		84	7.8		438	22.0		205	19.5
Na Ammonium Acetate	mg/kg	56	3162.0	342.00		62.0	11.80		13	4.6		45.0	6.92		13.3	5.30
Bray Extractable K	mg/kg	3	221.0	0.0		444	20.0		212	6.4		157	2.0		161.0	4.00
K- Olsen/Bicarb.	mg/kg	6	212.6	5.6		370	12.05		273	13.4		118	15.5		158	13.2
K Modified Morgan	mg/kg	2	355.0	16.0		423	7.0		316	4.5		195	2.5		163	0.0
K True Morgan	mg/kg	6	163.0	6.8		368	8.00		253	19.8		86	6.5		134.0	4.00
Ca Modified Morgan	mg/kg	3	10401.4	289		562	42.1		2376	15.7		3263	94.7		1379	23.1
Aluminum KCL Extr.	mg/kg	3	0.0	0.010		3.00	2.820		4.000	1.000		0.02	0.01		4	0.7

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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
Mehlich-1 Multi Element (scoop)																
Scoop Soil Mass	g	5	5.0	0.000		5.00	0.000		5.00	0.000		5.00	0.000		5.00	0.000
P	mg/kg	5	169.5	9.5		17.9	0.15		68	3.8		310.4	16.6		68.8	0.29
K	mg/kg	5	120.0	11.1		387	2.3		237	56.8		88	8.3		133.1	5.83
Ca	mg/kg	5	3825.7	370		656	27.5		2414	135		3218	85.5		1511	64.9
Mg	mg/kg	5	399.0	23.1		143	1.96		93	14.1		426	22.70		207	4.9
Mn	mg/kg	4	15.0	1.45		28.4	1.22		564.5	38.99		43.7	0.74		41.5	1.11
Zn	mg/kg	4	0.6	0.049		7.17	0.095		5.0	0.87		1.90	0.034		3.97	0.083
Mehlich-3 Multi-Element (scoop)																
Scoop Soil Mass	g	25	2.3	0.250		2.49	0.246		1.86	0.235		2.30	0.290		2.38	0.239
Assumed Density	g/cm ³	12	1.2	0.000		1.18	0.000		1.18	0.000		1.18	0.000		1.18	0.000
Volume of Scoop	cm ³	25	2.0	0.300		2.00	0.300		2.00	0.300		2.00	0.300		2.00	0.300
Extractant Volume mL	mL	27	20.0	0.000		20.0	0.00		20.0	0.00		20.0	0.00		20.0	0.00
P Colorimetric	mg/kg	18	68.5	3.57		32.9	2.54		131.2	10.20		48.8	6.70		75.5	4.90
P ICP-AES	mg/kg	41	75.2	8.80		43.2	5.00		145.4	8.63		53.0	5.20		104.8	11.97
K	mg/kg	45	373.0	27.0		465	48.9		264	28.0		218	10.0		187	14.9
Ca	mg/kg	42	8102.7	589		712	75.1		1872	194		3138	237.0		1553	156.7
Mg	mg/kg	43	701.0	41.0		151	15.6		90	11.8		501	34.2		221	18.9
Na	mg/kg	35	3358.0	392.22		69.2	12.20		15	7.9		47.7	10.04		12.3	5.87
S	mg/kg	33	3115.7	615.50		57.3	9.93		27	4.4		13.6	3.38		34.0	5.42
Al	mg/kg	26	219.7	118.7		384	52.3		1021	70.2		590	42.0		802	80.8
Zn	mg/kg	38	3.6	0.441		8.02	1.182		6.2	0.68		3.50	0.340		5.10	0.512
Mn	mg/kg	38	99.3	12.9		27.1	3.20		758.5	58.63		245.5	25.76		48.4	6.02
Fe	mg/kg	36	92.0	8.69		416	51.3		209	21.8		72	8.1		270	22.2
Cu	mg/kg	38	3.8	0.310		0.900	0.155		2.1	0.30		3.27	0.317		2.03	0.190
B	mg/kg	30	44.5	3.208		0.715	0.225		1.00	0.170		1.370	0.180		0.700	0.165

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Micronutrients																
Zn - DTPA	mg/kg	63	1.6	0.150		5.40	0.490		2.32	0.310		1.52	0.110		3.72	0.350
Mn - DTPA	mg/kg	47	9.0	1.44		22.2	2.30		350.10	70.90		20.4	2.40		30.7	3.80
Fe - DTPA	mg/kg	50	7.9	1.080		145	14.1		51.2	5.95		9.7	1.3		140.7	12.23
Cu - DTPA	mg/kg	52	2.1	0.155		0.530	0.084		1.18	0.125		1.29	0.090		1.59	0.105
Zn - HCl	mg/kg	3	4.0	0.870		7.77	0.150		5.4	0.09		3.92	0.720		5.31	0.100
Mn-H3PO4	mg/kg	9	14.8	3.30		24.3	1.62		527.0	99.30		30.2	1.75		29.0	1.00
Cl - Ca(NO3)2 Extr.	mg/kg	15	573.0	134.13		150	19.6		5.4	1.35		15.40	2.60		3.19	0.89
B - Hot Wat.	mg/kg	33	25.6	6.500		0.500	0.140		0.675	0.161		0.595	0.157		0.655	0.143
B-DTPA/Sorbitol	mg/kg	13	38.3	2.670		0.340	0.060		0.369	0.082		0.579	0.092		0.397	0.089
Soil Organic Matter																
Soil Kjeldahl N	%	19	0.1	0.004		0.111	0.011		0.240	0.013		0.128	0.008		0.168	0.012
Soil TN (combustion)	%	33	0.1	0.013		0.120	0.010		0.263	0.011		0.140	0.010		0.179	0.011
Soil TOC (Combustion)	%	9	0.5	0.070		1.33	0.065		3.060	0.040		1.350	0.050		1.85	0.055
Soil Total C (Combustion)	%	25	0.5	0.066		1.33	0.050		3.130	0.042		1.389	0.041		1.90	0.165
SOM - Walkley-Black	%	31	0.8	0.080		2.44	0.160		4.740	0.424		2.27	0.170		3.20	0.200
SOM - LOI (% Wt loss)	%	61	1.7	0.300		2.40	0.106		6.140	0.220		2.76	0.140		3.34	0.140
CaCO3 Content	%	12	1.3	0.325		0.160	0.160		0.515	0.432		0.502	0.497		0.230	0.230
CEC - Cation Displacement	cmol/kg	19	26.6	2.65		5.81	0.778		13.95	1.650		18.60	2.385		12.7	1.25
CEC - Estimation	cmol/kg	12	64.1	4.15		7.35	1.58		10.0	1.00		18.60	1.037		19.2	3.91
Soil Density (Scoop)	g/cc	14	1.3	0.022		1.42	0.035		0.93	0.055		1.22	0.042		1.33	0.046
Particle Size Analysis																
Sand 2000 - 50 um	%	35	38.6	2.08		72.6	2.93		26.2	3.04		47.0	3.04		62.0	3.08
Silt 50 - 2 um	%	35	22.0	3.00		20.1	2.48		55.1	3.71		35.5	2.90		25.6	2.80
Clay 2 - 0 um	%	35	39.3	1.99		6.70	1.70		17.75	4.27		17.75	2.25		12.3	1.75

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Lab^{1,2}

[Redacted]

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