2006 North American Proficiency Testing Program
1st Quarter Report - June 16, 2006

Laboratory ID

Soil			Soil 2006-101			Soil 2006-102			Soil 2006-103			Soil 2006-104			Soil 2006-105		
Analysis	**Units**	***n***	**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	%	31	**45.3**	*4.70*		**31.4**	*3.11*		**53.5**	*6.08*		**48.8**	*3.49*		**38.9**	*3.11*	
pH - sp	Unit	42	**7.94**	*0.13*		**7.10**	*0.10*		**7.50**	*0.10*		**7.05**	*0.12*		**8.05**	*0.11*	
ECe - sp	dS/m	45	**8.99**	*1.14*		**1.82**	*0.26*		**0.63**	*0.09*		**0.33**	*0.07*		**0.33**	*0.05*	
HCO3 - sp	mmolc/L	19	**3.84**	*0.84*		**2.46**	*1.06*		**4.13**	*1.28*		**2.49**	*0.66*		**3.10**	*0.56*	
Ca - sp	mmolc/L	34	**14.0**	*2.2*		**11.1**	*1.45*		**5.23**	*0.65*		**2.24**	*0.65*		**2.06**	*0.28*	
Mg - sp	mmolc/L	35	**5.59**	*0.90*		**6.59**	*1.14*		**1.00**	*0.1*		**0.86**	*0.2*		**1.23**	*0.18*	
Na - sp	mmolc/L	35	**82.3**	*11.8*		**0.56**	*0.20*		**0.32**	*0.18*		**0.35**	*0.13*		**0.60**	*0.18*	
SAR - sp	value	31	**26.6**	*2.3*		**0.20**	*0.07*		**0.18**	*0.10*		**0.28**	*0.12*		**0.45**	*0.13*	
Cl - sp	mmolc/L	24	**48.1**	*9.6*		**0.63**	*0.23*		**0.40**	*0.08*		**0.24**	*0.09*		**0.23**	*0.09*	
SO_4 - sp	mmolc/L	22	**57.3**	*12.9*		**1.56**	*0.30*		**0.74**	*0.17*		**0.82**	*0.18*		**0.32**	*0.09*	
NO_3 - sp	mmolc/L	15	**1.74**	*0.37*		**12.7**	*3.20*		**0.12**	*0.12*		**0.04**	*0.08*		**0.15**	*0.09*	
B - sp	mg/L	16	**0.30**	*0.06*		**0.08**	*0.03*		**0.09**	*0.03*		**0.06**	*0.02*		**0.21**	*0.04*	
Soil pH & EC																	
Soil EC (1:1)	dS/m	33	**3.01**	*0.22*		**0.53**	*0.13*		**0.54**	*0.07*		**0.13**	*0.03*		**0.20**	*0.02*	
Soil EC (1:2)	dS/m	53	**2.23**	*0.37*		**0.39**	*0.06*		**0.26**	*0.05*		**0.10**	*0.02*		**0.14**	*0.02*	
pH (1:1) Water	Unit	98	**8.36**	*0.10*		**7.37**	*0.09*		**7.83**	*0.08*		**7.13**	*0.07*		**8.40**	*0.10*	
pH (1:2) Water	Unit	42	**8.61**	*0.09*		**7.45**	*0.10*		**7.91**	*0.10*		**7.20**	*0.10*		**8.44**	*0.14*	
pH (1:1) 0.01M $CaCl_2$	Unit	24	**8.09**	*0.14*		**7.07**	*0.13*		**7.48**	*0.09*		**6.52**	*0.09*		**7.81**	*0.11*	
pH (1:2) 0.01M $CaCl_2$	Unit	19	**8.02**	*0.14*		**7.10**	*0.10*		**7.48**	*0.08*		**6.60**	*0.10*		**7.71**	*0.13*	
Buffer pH, Lime Req.																	
SMP Buffer pH	Unit	53	**7.59**	*0.09*		**7.33**	*0.07*		**7.43**	*0.07*		**7.30**	*0.07*		**7.52**	*0.06*	
Adams-Evans Buf pH	Unit	11	**7.88**	*0.02*		**7.80**	*0.02*		**7.73**	*0.05*		**7.81**	*0.05*		**7.81**	*0.04*	
Woodruff Buf. pH	Unit	18	**7.16**	*0.04*		**7.02**	*0.04*		**7.15**	*0.04*		**6.94**	*0.04*		**7.15**	*0.04*	
Mehlich Buffer pH	Unit	4	**6.85**	*0.05*		**6.67**	*0.03*		**6.80**	*0.04*		**6.55**	*0.01*		**6.94**	*0.06*	
Titratable Acidity	cmol/kg	0															

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Inorganic Nitrogen (NO3-N & NH4-N)																	
NO3-N Cd. Rd.	mg/kg	70	**18.3**	*0.94*		**74.6**	*4.35*		**22.3**	*1.31*		**2.30**	*0.46*		**1.97**	*0.53*	
NO3-N ISE	mg/kg	24	**22.7**	*4.3*		**56.0**	*9.4*		**22.2**	*4.1*		**2.70**	*1.11*		**4.31**	*2.40*	
NO3-N CTA	mg/kg	7	**19.4**	*1.4*		**77.0**	*1.3*		**23.4**	*0.7*		**3.40**	*0.60*		**2.31**	*0.41*	
NO3-N Ion Chr.	mg/kg	3	**18.2**	*2.2*		**67.3**	*8.3*		**21.4**	*2.9*		**2.00**	*0.25*		**1.70**	*0.30*	
NO3-N Other	mg/kg	10	**18.6**	*1.7*		**68.0**	*12.4*		**23.1**	*3.6*		**2.93**	*1.07*		**2.48**	*1.05*	
NH4 - N (KCl Extr.)	mg/kg	59	**2.15**	*0.73*		**1.20**	*0.63*		**5.30**	*1.12*		**5.90**	*0.93*		**2.00**	*0.60*	
Phosphorus and Sulfur																	
PO4-P Bray P (1:10)	mg/kg	53	**3.20**	*1.20*		**8.00**	*1.00*		**21.0**	*3.0*		**8.00**	*1.00*		**26.5**	*3.50*	
PO4-P Bray P1 (1:7)	mg/kg	13	**3.00**	*2.34*		**5.00**	*1.00*		**12.5**	*1.5*		**5.00**	*1.00*		**19.0**	*2.60*	
PO4-P Olsen/Bicarb	mg/kg	67	**4.00**	*1.00*		**5.00**	*1.20*		**14.0**	*2.0*		**5.00**	*1.00*		**10.0**	*1.10*	
PO4-P AB-DTPA	mg/kg	1	**3.01**	*0*		**4.28**	*0*		**9.20**	*0*		**4.81**	*0*		**6.33**	*0*	
PO4-P M. Morgan	mg/kg	7	**10.0**	*0.80*		**2.00**	*0.24*		**19.6**	*2.4*		**0.94**	*0.26*		**24.7**	*3.99*	
PO4-P Mod. Kewlona	mg/kg	6	**8.88**	*1.15*		**6.25**	*1.35*		**20.6**	*4.6*		**5.91**	*1.55*		**22.5**	*3.07*	
PO4-P Strg Bray P2	mg/kg	12	**39.0**	*5.5*		**45.3**	*5.5*		**135**	*13*		**31.0**	*4.20*		**283**	*44.4*	
PO4-P Water Soluble	mg/kg	3	**2.60**	*0.40*		**0.20**	*0.00*		**2.00**	*1.20*		**0.70**	*0.60*		**2.90**	*1.10*	
SO4 - S (PO4 Extr.)	mg/kg	44	**180**	*68.5*		**11.9**	*3.21*		**7.24**	*2.05*		**6.07**	*1.87*		**3.80**	*1.82*	
Ammonium Acetate Bases																	
K	mg/kg	99	**294**	*15.2*		**98.0**	*9.1*		**189**	*11.5*		**90.1**	*9.1*		**230**	*20.0*	
Ca	mg/kg	88	**3844**	*668*		**2134**	*250*		**7199**	*800*		**1050**	*108*		**4179**	*667*	
Mg	mg/kg	90	**363**	*30.2*		**376**	*47.0*		**454**	*36.4*		**141**	*14*		**639**	*70.5*	
Na	mg/kg	69	**1721**	*182*		**19.0**	*9.0*		**14.1**	*6.07*		**14.0**	*5.64*		**25.0**	*6.0*	
K - Bray (1:10)	mg/kg	3	**210**	*7.0*		**77.3**	*6.2*		**120**	*8.8*		**80.4**	*4.91*		**174**	*3.0*	
K- Bicarb.	mg/kg	9	**211**	*15.0*		**86.0**	*6.0*		**124**	*9.0*		**96.0**	*8.00*		**132**	*3.0*	
K Modified Morgan	mg/kg	6	**171**	*15.9*		**85.5**	*10.0*		**101**	*16.4*		**90.9**	*4.29*		**110**	*10.0*	
Ca Modified Morgan	mg/kg	3	**19960**	*1112*		**2693**	*4.1*		**10902**	*1016*		**1078**	*233*		**11336**	*310*	
Al KCL Extr.	mg/kg	4	**0.49**	*0.24*		**0.14**	*0.04*		**0.14**	*0.1*		**0.19**	*0.09*		**0.20**	*0.08*	

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Mehlich-1 Multi Element (scoop)																	
Scoop Soil Mass	g	8	**5.00**	*0*		**4.90**	*0.11*		**5.00**	*0.06*		**4.96**	*0.04*		**4.89**	*0.11*	
P	mg/kg	9	**6.52**	*1.34*		**26.6**	*4.5*		**22.9**	*2.9*		**30.0**	*3.60*		**41.6**	*3.02*	
K	mg/kg	9	**103**	*7.2*		**76.5**	*5.9*		**61.9**	*4.2*		**77.2**	*7.39*		**50.3**	*2.27*	
Ca	mg/kg	9	**4761**	*373*		**2699**	*234*		**5113**	*287*		**1096**	*94*		**4893**	*338*	
Mg	mg/kg	9	**282**	*7.5*		**535**	*26*		**321**	*14.1*		**153**	*17.4*		**617**	*14.4*	
Mn	mg/kg	9	**5.46**	*0.75*		**14.0**	*3.3*		**5.28**	*0.58*		**66.9**	*8.34*		**3.45**	*0.74*	
Zn	mg/kg	9	**0.12**	*0.11*		**2.17**	*0.09*		**0.10**	*0.06*		**1.87**	*0.09*		**0.10**	*0.09*	
Mehlich-3 Mult-Element (scoop)																	
Scoop Soil Mass	g	32	**2.00**	*0.18*		**1.90**	*0.33*		**2.22**	*0.27*		**1.89**	*0.24*		**2.00**	*0.34*	
Assumed Density	g/cm3	17	**1.17**	*0.03*		**1.12**	*0.08*		**1.18**	*0.02*		**1.13**	*0.05*		**1.17**	*0.03*	
Volume of Scoop	cm3	33	**2.00**	*0.5*		**2.00**	*0.5*		**2.00**	*0.5*		**2.00**	*0.5*		**2.00**	*0.5*	
Extractrant Volume mL	mL	32	**20.0**	*0*		**20.0**	*0*		**20.0**	*0*		**20.0**	*0*		**20.0**	*0*	
P Colorimetric	mg/kg	26	**15.0**	*1.10*		**8.94**	*1.06*		**31.0**	*2.0*		**10.0**	*0.95*		**35.8**	*3.00*	
P ICP-AES	mg/kg	45	**16.2**	*1.7*		**11.9**	*1.6*		**34.5**	*2.0*		**9.80**	*1.20*		**39.9**	*2.93*	
K	mg/kg	55	**321**	*26*		**106**	*8.0*		**195**	*17.2*		**98.0**	*7.0*		**259**	*21.0*	
Ca	mg/kg	53	**5511**	*411*		**2428**	*208*		**7972**	*599*		**1147**	*79*		**5490**	*424*	
Mg	mg/kg	53	**497**	*29*		**427**	*40*		**533**	*29*		**175**	*11.0*		**894**	*70*	
Na	mg/kg	38	**1833**	*214*		**22.9**	*10.2*		**16.7**	*6.03*		**16.4**	*5.41*		**30.5**	*7.90*	
S	mg/kg	36	**389**	*31.0*		**22.5**	*5.24*		**18.3**	*5.35*		**14.0**	*3.30*		**14.3**	*6.20*	
Al	mg/kg	27	**90.9**	*64.2*		**679**	*66.3*		**261**	*71.1*		**586**	*76*		**364**	*96*	
Zn	mg/kg	46	**2.10**	*0.26*		**3.20**	*0.32*		**1.79**	*0.21*		**2.47**	*0.36*		**4.36**	*0.34*	
Mn	mg/kg	44	**104**	*7.9*		**118**	*20.1*		**163**	*16*		**159**	*15.5*		**232**	*26.9*	
Fe	mg/kg	41	**33.5**	*3.5*		**143**	*19.0*		**75.6**	*8.12*		**182**	*20.9*		**88.5**	*9.5*	
Cu	mg/kg	46	**2.34**	*0.3*		**1.80**	*0.23*		**3.95**	*0.45*		**1.33**	*0.14*		**4.25**	*0.43*	
B	mg/kg	39	**2.40**	*0.25*		**1.30**	*0.17*		**3.50**	*0.32*		**0.31**	*0.13*		**3.00**	*0.40*	

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Micronutrients																	
Zn - DTPA	mg/kg	77	**0.71**	*0.09*		**0.90**	*0.15*		**0.58**	*0.08*		**1.20**	*0.14*		**1.36**	*0.12*	
Mn - DTPA	mg/kg	69	**5.70**	*0.65*		**2.85**	*1.06*		**9.63**	*1.43*		**14.8**	*2.80*		**7.23**	*1.44*	
Fe - DTPA	mg/kg	71	**1.94**	*0.37*		**13.9**	*2.6*		**8.40**	*0.90*		**25.8**	*3.30*		**8.60**	*0.81*	
Cu - DTPA	mg/kg	71	**0.80**	*0.10*		**0.39**	*0.09*		**1.25**	*0.10*		**0.60**	*0.09*		**1.42**	*0.13*	
Zn - HCl	mg/kg	6	**0.68**	*0.59*		**3.19**	*1.11*		**1.39**	*0.38*		**2.13**	*0.77*		**1.05**	*0.58*	
Mn-H_3PO_4	mg/kg	10	**9.27**	*1.37*		**8.63**	*2.45*		**5.73**	*1.12*		**34.1**	*4.82*		**4.80**	*0.65*	
Cl - $Ca(NO_3)_2$ Extr.	mg/kg	24	**763**	*122*		**7.84**	*2.24*		**6.56**	*1.80*		**3.80**	*1.45*		**2.78**	*1.18*	
B - Hot Wat.	mg/kg	58	**0.97**	*0.24*		**0.63**	*0.23*		**0.82**	*0.36*		**0.20**	*0.06*		**0.98**	*0.31*	
B-DTPA/Sorbitol	mg/kg	11	**1.43**	*0.27*		**0.30**	*0.10*		**1.10**	*0.30*		**0.12**	*0.04*		**1.46**	*0.29*	
Soil Organic Matter																	
Soil Kjeldahl N	%	29	**0.08**	*0.01*		**0.23**	*0.02*		**0.30**	*0.02*		**0.06**	*0.01*		**0.13**	*0.01*	
Soil TN (combustion)	%	41	**0.08**	*0.01*		**0.23**	*0.01*		**0.29**	*0.01*		**0.06**	*0.01*		**0.13**	*0.01*	
Soil TOC (combustion)	%	33	**1.71**	*0.08*		**2.69**	*0.09*		**3.65**	*0.14*		**0.73**	*0.03*		**5.19**	*0.19*	
SOM - Walkley-Black	%	51	**1.30**	*0.11*		**4.25**	*0.35*		**5.00**	*0.43*		**1.30**	*0.18*		**2.05**	*0.18*	
SOM - LOI (Raw Values)	%	76	**1.38**	*0.2*		**4.89**	*0.25*		**6.09**	*0.4*		**2.10**	*0.15*		**2.50**	*0.20*	
$CaCO_3$ Content	%	19	**8.37**	*0.63*		**2.03**	*0.43*		**4.00**	*0.83*		**0.50**	*0.18*		**14.1**	*7.59*	
CEC - Displacement	cmol/kg	30	**14.4**	*1.0*		**15.1**	*1.46*		**36.3**	*3.70*		**7.90**	*1.36*		**17.9**	*1.85*	
CEC - Estimation	cmol/kg	13	**31.9**	*1.6*		**14.9**	*2.25*		**42.4**	*4.28*		**6.40**	*0.85*		**28.5**	*1.98*	
Soil Density (Scoop)	g/cc	15	**1.17**	*0.07*		**1.03**	*0.13*		**1.27**	*0.06*		**1.05**	*0.05*		**1.07**	*0.05*	
Particle Size Analysis																	
Sand 2000 - 50 um	%	45	**22.0**	*4.6*		**56.0**	*3.0*		**33.6**	*3.2*		**48.0**	*3.0*		**18.0**	*4.0*	
Silt 50 - 2 um	%	45	**55.2**	*4.2*		**31.0**	*3.8*		**34.2**	*3.8*		**35.0**	*2.8*		**54.0**	*4.0*	
Clay 2 - 0 um	%	45	**22.5**	*1.5*		**12.0**	*3.0*		**32.0**	*3.0*		**17.5**	*1.5*		**25.0**	*2.5*	

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