2006 North American Proficiency Testing Program
2nd Quarter Report - September 15, 2006

Laboratory ID

Soil			Soil 2006-106			Soil 2006-107			Soil 2006-108			Soil 2006-109			Soil 2006-110		
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	**37.3**	*2.00*		**50.0**	*3.33*		**45.2**	*3.25*		**36.3**	*2.30*		**47.0**	*3.25*	
pH - sp	Unit	43	**7.97**	*0.14*		**6.00**	*0.20*		**7.60**	*0.10*		**5.51**	*0.16*		**6.88**	*0.12*	
ECe - sp	dS/m	44	**0.38**	*0.05*		**0.16**	*0.04*		**1.60**	*0.20*		**0.57**	*0.06*		**0.37**	*0.09*	
HCO3 - sp	mmolc/L	17	**3.20**	*0.70*		**0.80**	*0.26*		**3.85**	*1.19*		**0.56**	*0.26*		**3.03**	*0.65*	
Ca - sp	mmolc/L	35	**2.39**	*0.36*		**0.78**	*0.20*		**9.65**	*1.44*		**2.50**	*0.38*		**2.41**	*0.79*	
Mg - sp	mmolc/L	35	**1.30**	*0.15*		**0.39**	*0.11*		**1.80**	*0.31*		**1.55**	*0.24*		**1.00**	*0.24*	
Na - sp	mmolc/L	36	**0.80**	*0.22*		**0.48**	*0.16*		**4.74**	*0.54*		**0.74**	*0.20*		**0.50**	*0.22*	
SAR - sp	value	30	**0.60**	*0.12*		**0.60**	*0.24*		**2.01**	*0.15*		**0.51**	*0.17*		**0.40**	*0.18*	
Cl - sp	mmolc/L	20	**0.24**	*0.08*		**0.32**	*0.09*		**1.18**	*0.18*		**0.22**	*0.06*		**0.25**	*0.07*	
SO4 - sp	mmolc/L	23	**0.44**	*0.12*		**0.29**	*0.05*		**4.13**	*0.63*		**0.56**	*0.09*		**0.87**	*0.18*	
NO_3 - sp	mmolc/L	8	**0.11**	*0.06*		**0.01**	*0.00*		**5.53**	*2.06*		**3.19**	*1.08*		**0.02**	*0.01*	
B - sp	mg/L	16	**0.19**	*0.04*		**0.06**	*0.04*		**0.11**	*0.03*		**0.21**	*0.05*		**0.06**	*0.04*	
Soil pH & EC																	
Soil EC (1:1)	(dS/m)	32	**0.23**	*0.03*		**0.08**	*0.02*		**0.91**	*0.06*		**0.26**	*0.02*		**0.16**	*0.06*	
Soil EC (1:2)	(dS/m)	49	**0.15**	*0.02*		**0.05**	*0.01*		**0.49**	*0.08*		**0.14**	*0.02*		**0.10**	*0.02*	
pH (1:1) Water	Unit	91	**8.36**	*0.11*		**6.10**	*0.13*		**7.85**	*0.08*		**5.76**	*0.06*		**7.01**	*0.09*	
pH (1:2) Water	Unit	41	**8.41**	*0.13*		**6.10**	*0.16*		**7.90**	*0.11*		**5.89**	*0.11*		**7.00**	*0.10*	
pH (1:1) 0.01M CaCl2	Unit	23	**7.74**	*0.07*		**5.24**	*0.14*		**7.56**	*0.09*		**5.25**	*0.07*		**6.43**	*0.07*	
pH (1:2) 0.01M CaCl2	Unit	18	**7.75**	*0.07*		**5.21**	*0.05*		**7.53**	*0.12*		**5.24**	*0.06*		**6.41**	*0.12*	
Buffer pH, Lime Req.																	
SMP Buffer pH	Unit	51	**7.50**	*0.04*		**6.60**	*0.13*		**7.46**	*0.04*		**6.89**	*0.08*		**7.25**	*0.05*	
Adams-Evans Buf pH	Unit	11	**7.80**	*0.03*		**7.45**	*0.07*		**7.69**	*0.03*		**7.58**	*0.05*		**7.81**	*0.03*	
Woodruff Buf. pH	Unit	18	**7.12**	*0.03*		**6.58**	*0.08*		**7.10**	*0.03*		**6.70**	*0.05*		**6.95**	*0.04*	
Mehlich Buffer pH	Unit	4	**6.90**	*0.03*		**6.02**	*0.10*		**6.79**	*0.03*		**6.17**	*0.06*		**6.51**	*0.04*	
Titratable Acidity	cmol/kg	1	**0.01**	*0.00*		**5.85**	*5.69*		**1.47**	*0.00*		**5.11**	*1.10*		**3.00**	*0.00*	

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Inorganic Nitrogen (NO3-N & NH4-N)																	
NO3-N Cd. Rd.	mg/kg	62	**3.50**	*0.50*		**0.87**	*0.65*		**56.4**	*3.23*		**22.5**	*1.42*		**1.00**	*0.56*	
NO3-N ISE	mg/kg	25	**4.67**	*2.13*		**1.50**	*0.70*		**53.0**	*11.0*		**20.5**	*2.54*		**2.00**	*1.20*	
NO3-N CTA	mg/kg	6	**3.95**	*0.21*		**2.53**	*0.77*		**58.3**	*2.65*		**22.7**	*1.20*		**2.18**	*0.26*	
NO3-N Ion Chr.	mg/kg	3	**3.32**	*0.11*		**0.53**	*0.00*		**61.7**	*4.80*		**24.4**	*2.75*		**0.74**	*0.34*	
NO3-N Other _____	mg/kg	8	**3.75**	*2.24*		**1.80**	*0.85*		**58.4**	*16.0*		**24.2**	*5.70*		**1.81**	*0.66*	
NH4 - N (KCl Extr.)	mg/kg	54	**2.57**	*0.57*		**9.80**	*1.28*		**4.14**	*0.80*		**5.12**	*0.68*		**6.00**	*0.68*	
Phosphorus and Sulfur																	
PO4-P Bray P (1:10)	mg/kg	53	**25.8**	*2.20*		**65.0**	*7.00*		**19.5**	*1.80*		**56.0**	*4.00*		**8.26**	*0.90*	
PO4-P Bray P1 (1:7)	mg/kg	13	**17.5**	*2.00*		**53.0**	*7.87*		**13.5**	*1.50*		**46.5**	*4.50*		**6.00**	*1.00*	
PO4-P Olsen/Bicarb	mg/kg	64	**10.0**	*1.10*		**34.2**	*4.22*		**9.00**	*1.30*		**36.0**	*4.00*		**5.23**	*0.78*	
PO4-P AB-DTPA	mg/kg	1	**7.65**	*0.00*		**29.7**	*7.30*		**8.70**	*0.00*		**30.9**	*3.70*		**5.70**	*0.30*	
PO4-P M. Morgan	mg/kg	8	**21.5**	*3.94*		**4.45**	*0.35*		**23.0**	*4.55*		**8.40**	*1.60*		**1.08**	*0.18*	
PO4-P Mod. Kewlona	mg/kg	4	**20.0**	*2.11*		**45.2**	*3.50*		**16.4**	*2.50*		**39.7**	*3.85*		**5.40**	*1.09*	
PO4-P Stong Bray (1:10)	mg/kg	10	**276**	*25.3*		**104**	*7.9*		**319**	*26.4*		**216**	*23.4*		**34.7**	*3.00*	
PO4-P Water Soluble	mg/kg	5	**2.81**	*2.30*		**1.65**	*1.20*		**2.27**	*1.82*		**3.81**	*1.66*		**1.21**	*0.76*	
SO4 - S (PO4 Extr.)	mg/kg	41	**3.69**	*1.69*		**3.25**	*1.23*		**34.0**	*9.00*		**5.05**	*1.81*		**6.85**	*1.15*	
Bases																	
K Ammonium Acetate	mg/kg	93	**253**	*21.0*		**158**	*25.0*		**540**	*42.0*		**242**	*15.0*		**92.5**	*8.1*	
Ca Ammonium Acetate	mg/kg	85	**4176**	*582*		**1020**	*179*		**5579**	*486*		**1455**	*93*		**1008**	*88*	
Mg Ammonium Acetate	mg/kg	86	**638**	*62.7*		**129**	*17.5*		**405**	*27.6*		**378**	*20.8*		**146**	*9.5*	
Na Ammonium Acetate	mg/kg	68	**28.5**	*6.22*		**17.30**	*6.80*		**181**	*19.4*		**22.5**	*6.50*		**14.7**	*5.85*	
Bray Extractable K	mg/kg	3	**193**	*4.7*		**125**	*6.7*		**365**	*11.0*		**194**	*13.6*		**83.5**	*2.46*	
K- Bicarb.	mg/kg	7	**140**	*11.0*		**170**	*14.0*		**340**	*17.0*		**204**	*18.3*		**102**	*11.0*	
K Modified Morgan	mg/kg	6	**123**	*19.0*		**153**	*4.5*		**248**	*25.0*		**173**	*12.5*		**97.0**	*4.0*	
Ca Modified Morgan	mg/kg	6	**12240**	*1385*		**1180**	*82.5*		**11020**	*1534*		**1586**	*11.5*		**1105**	*14.0*	
Aluminum KCL Extr.	mg/kg	4	**0.57**	*0.25*		**1.78**	*0.17*		**0.58**	*0.32*		**1.10**	*0.25*		**0.30**	*0.12*	

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Mehlich-1 Multi Element (scoop)																	
Scoop Soil Mass	g	7	**5.00**	*0.00*		**5.00**	*0.00*		**5.00**	*0.00*		**5.00**	*0.00*		**5.00**	*0.00*	
P	mg/kg	8	**37.5**	*4.50*		**29.1**	*3.38*		**64.1**	*12.5*		**207**	*19.0*		**30.2**	*2.70*	
K	mg/kg	7	**55.0**	*2.36*		**107**	*4.12*		**145**	*4.9*		**151**	*5.1*		**69.5**	*5.29*	
Ca	mg/kg	7	**4666**	*396*		**966**	*148*		**4919**	*394*		**1456**	*33.0*		**1089**	*69.6*	
Mg	mg/kg	7	**584.2**	*30.2*		**119**	*16.5*		**300**	*11.4*		**313**	*11.8*		**169**	*27.3*	
Mn	mg/kg	7	**3.25**	*0.27*		**69.1**	*6.93*		**1.77**	*0.64*		**27.0**	*0.95*		**59.2**	*9.79*	
Zn	mg/kg	7	**0.11**	*0.08*		**1.23**	*0.28*		**0.46**	*0.31*		**3.66**	*0.44*		**1.91**	*0.49*	
Mehlich-3 Mult-Element (scoop)																	
Scoop Soil Mass	g	30	**2.00**	*0.45*		**1.79**	*0.45*		**2.15**	*0.35*		**2.20**	*0.30*		**2.00**	*0.50*	
Assumed Density	g/cm3	13	**1.18**	*0.00*		**1.18**	*0.00*		**1.18**	*0.00*		**1.18**	*0.00*		**1.18**	*0.00*	
Volume of Scoop	cm3	28	**2.00**	*0.50*		**2.00**	*0.50*		**2.00**	*0.50*		**2.00**	*0.50*		**2.00**	*0.50*	
Extractrant Volume mL	mL	32	**20.0**	*5.00*		**20.0**	*5.00*		**20.0**	*5.00*		**20.0**	*5.00*		**20.0**	*5.00*	
P Colorimetric	mg/kg	24	**37.0**	*2.00*		**75.0**	*5.80*		**29.0**	*1.95*		**67.5**	*6.50*		**10.4**	*0.60*	
P ICP-AES	mg/kg	41	**40.0**	*2.22*		**80.7**	*5.57*		**30.2**	*2.16*		**71.2**	*4.80*		**10.7**	*1.10*	
K	mg/kg	51	**272**	*14.7*		**160**	*20.0*		**539**	*19.8*		**243**	*14.3*		**99.0**	*8.00*	
Ca	mg/kg	48	**5596**	*293*		**1138**	*144*		**6727**	*418*		**1559**	*98*		**1140**	*82.7*	
Mg	mg/kg	48	**858**	*51.8*		**142**	*20.0*		**527**	*21.9*		**412**	*25.0*		**179**	*9.4*	
Na	mg/kg	35	**27.0**	*4.50*		**17.00**	*5.65*		**178**	*19.6*		**19.5**	*5.93*		**14.7**	*5.70*	
S	mg/kg	34	**14.6**	*5.88*		**9.00**	*4.30*		**53.3**	*8.01*		**10.19**	*5.03*		**14.0**	*4.19*	
Al	mg/kg	23	**397**	*75.0*		**1202**	*118*		**337**	*62.9*		**614**	*48.0*		**616**	*59.0*	
Zn	mg/kg	44	**4.48**	*0.45*		**1.60**	*0.23*		**32.2**	*2.27*		**4.80**	*0.59*		**2.39**	*0.29*	
Mn	mg/kg	41	**239**	*25.1*		**113**	*10.1*		**256**	*38.7*		**61.5**	*6.47*		**161**	*13.5*	
Fe	mg/kg	37	**87.0**	*11.9*		**301**	*30.8*		**44.5**	*8.50*		**191**	*24.1*		**164**	*17.4*	
Cu	mg/kg	42	**4.56**	*0.43*		**1.16**	*0.16*		**37.6**	*3.68*		**2.92**	*0.26*		**1.40**	*0.21*	
B	mg/kg	38	**2.91**	*0.31*		**0.41**	*0.25*		**2.02**	*0.27*		**0.48**	*0.17*		**0.33**	*0.10*	

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Micronutrients																	
Zn - DTPA	mg/kg	72	**1.20**	*0.10*		**1.00**	*0.17*		**12.0**	*1.00*		**2.64**	*0.24*		**1.20**	*0.15*	
Mn - DTPA	mg/kg	63	**9.73**	*2.37*		**47.4**	*7.55*		**6.15**	*1.95*		**22.7**	*1.72*		**13.0**	*3.25*	
Fe - DTPA	mg/kg	64	**8.19**	*0.81*		**65.8**	*11.2*		**4.30**	*0.51*		**48.6**	*5.52*		**21.1**	*3.15*	
Cu - DTPA	mg/kg	65	**1.70**	*0.20*		**0.80**	*0.14*		**15.0**	*1.53*		**2.25**	*0.22*		**0.60**	*0.10*	
Zn - HCl	mg/kg	6	**0.72**	*0.54*		**1.77**	*0.33*		**27.3**	*8.55*		**5.49**	*0.50*		**2.42**	*0.43*	
Mn-H3PO4	mg/kg	9	**5.58**	*0.78*		**60.0**	*10.8*		**2.30**	*0.67*		**19.4**	*1.91*		**29.9**	*4.30*	
Cl - Ca(NO3)2 Extr.	mg/kg	17	**2.24**	*0.76*		**3.39**	*1.05*		**20.0**	*2.49*		**2.10**	*0.58*		**3.49**	*0.91*	
B - Hot Wat.	mg/kg	50	**1.00**	*0.33*		**0.23**	*0.09*		**0.80**	*0.29*		**0.45**	*0.13*		**0.20**	*0.06*	
B-DTPA/Sorbitol	mg/kg	8	**1.51**	*0.12*		**0.11**	*0.04*		**1.11**	*0.07*		**0.25**	*0.05*		**0.11**	*0.06*	
Soil Organic Matter																	
Soil Kjeldahl N	%	27	**0.135**	*0.009*		**0.096**	*0.012*		**0.110**	*0.013*		**0.063**	*0.007*		**0.058**	*0.008*	
Soil TN (combustion)	%	34	**0.134**	*0.008*		**0.098**	*0.008*		**0.120**	*0.010*		**0.066**	*0.006*		**0.060**	*0.010*	
Soil TOC (Combustion)	%	29	**5.23**	*0.18*		**1.85**	*0.05*		**1.38**	*0.07*		**0.48**	*0.02*		**0.72**	*0.05*	
SOM - Walkley-Black	%	45	**2.14**	*0.21*		**3.00**	*0.29*		**2.01**	*0.14*		**0.87**	*0.08*		**1.28**	*0.12*	
SOM - LOI (% Wt loss)	%	79	**2.56**	*0.24*		**4.06**	*0.26*		**2.90**	*0.30*		**1.59**	*0.19*		**2.05**	*0.11*	
CaCO3 Content	%	16	**19.7**	*12.9*		**0.50**	*0.20*		**2.51**	*0.61*		**0.65**	*0.20*		**0.50**	*0.10*	
CEC - Cation Displacement	cmol/kg	25	**18.2**	*1.60*		**15.2**	*1.10*		**27.1**	*2.47*		**13.2**	*0.80*		**8.45**	*1.50*	
CEC - Estimation	cmol/kg	16	**28.1**	*1.99*		**8.94**	*2.06*		**34.7**	*3.00*		**12.1**	*1.10*		**6.70**	*0.39*	
Soil Density (Scoop)	g/cc	10	**1.08**	*0.06*		**0.85**	*0.05*		**1.23**	*0.03*		**1.23**	*0.08*		**1.06**	*0.08*	
Particle Size Analysis																	
Sand 2000 - 50 um	%	46	**18.0**	*3.5*		**20.0**	*3.8*		**32.8**	*3.2*		**31.2**	*4.2*		**47.2**	*3.8*	
Silt 50 - 2 um	%	46	**55.4**	*4.6*		**65.0**	*5.0*		**33.5**	*3.5*		**54.0**	*4.0*		**35.0**	*3.0*	
Clay 2 - 0 um	%	46	**25.0**	*2.0*		**15.0**	*3.0*		**32.8**	*2.8*		**14.9**	*2.4*		**17.5**	*2.5*	

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