1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98113**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	41	24.5	43.8	**33.3**	*3.0*	9.0	82.9
pH - sp	Unit	49	7.0	8.2	**7.60**	*0.10*	1.3	77.6
ECe - sp	dS/m	51	0.17	4.8	**2.51**	*0.37*	14.7	82.4
HCO3 - sp	mmolc/L	19	2.3	11.5	**3.4**	*0.89*	26.2	63.2
Ca - sp	mmolc/L	45	1.5	36	**17.2**	*2.08*	12.1	77.8
Mg - sp	mmolc/L	45	0.1	11	**5.3**	*0.70*	13.2	80.0
Na - sp	mmolc/L	45	3.10	245	**8.2**	*0.91*	11.1	88.9
SAR - sp	value	38	0.99	100	**2.3**	*0.26*	11.3	84.2
Cl - sp	mmolc/L	25	1.47	108	**3.8**	*0.46*	12.1	84.0
SO4 - sp	mmolc/L	29	1.98	116	**18.3**	*2.11*	11.5	75.9
B - sp	mg/L	23	0.09	0.50	**0.18**	*0.03*	16.7	69.6
Soil EC								
Soil EC (1:1)	(dS/m)	44	0.50	344	**0.95**	*0.15*	15.3	81.8
Soil EC (1:2)	(dS/m)	38	0.05	670	**0.60**	*0.06*	10.0	71.1
Soil pH								
pH (1:1)	Unit	80	7.40	8.60	**7.90**	*0.10*	1.3	90.0
pH (1:2)	Unit	38	6.97	8.30	**7.91**	*0.15*	1.8	84.2
pH (1:1) 0.01 M CaCl2	Unit	16	7.20	7.90	**7.55**	*0.15*	4.0	100.0
pH (1:2) 0.01 M CaCl2	Unit	5	7.28	7.66	**7.58**	*0.05*	0.7	90.0
Buffer pH								
SMP Buffer pH	Unit	42	7.10	7.80	**7.52**	*0.07*	0.9	88.1
Adams-Evans Buf pH	Unit	8	7.69	7.98	**7.91**	*0.03*	0.4	87.5
Woodruff Buf. pH	Unit	8	0.0	7.29	**7.10**	*0.10*	1.4	100.0
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	59	6.8	134	**24.6**	*2.1*	8.5	84.7
ISE	mg/kg	32	6.2	81.5	**25.1**	*5.2*	20.7	87.5
CTA	mg/kg	6	14.0	29.6	**25.7**	*3.0*	11.7	83.3
Ion Chromatography	mg/kg	5	21.0	47.0	**25.2**	*4.2*	16.6	80.0
Other	mg/kg	10	5.8	31.0	**22.2**	*5.0*	22.6	90.0
NH4 - N (KCl Extr.)	mg/kg	47	2.3	21	**6.3**	*0.9*	15.0	76.6

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98113**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	51	1.0	101	**4.0**	*2.0*	50.0	70.0
PO4-P Bray P1 (1:7)	mg/kg	11	4.3	44	**9.0**	*3.0*	33.3	72.7
PO4-P Olsen/Bicarb	mg/kg	75	3.9	73	**36.3**	*3.3*	9.1	84.0
PO4-P AB-DTPA	mg/kg	3	*25*	*38*	**29.5**	*4.6*	15.6	100.0
PO4-P M. Morgan	mg/kg	9	30	183	**75.0**	*13.5*	18.0	77.8
SO4 - S (PO4 Extr.)	mg/kg	58	0	2032	**77.5**	*30.0*	38.7	82.8
Ammonium Acetate Bases								
K	mg/kg	92	22	600	**205**	*14*	6.8	85.7
Ca	mg/kg	89	323	35500	**4160**	*770*	18.5	86.4
Mg	mg/kg	89	28	2010	**314**	*33*	10.5	89.8
Na	mg/kg	72	13	424	**131**	*13*	10.0	68.1
Mehlich-1 Multi Element								
Soil Scoop Mass	g	7	5	7	**5.0**			
K	mg/kg	7	81	110	**97**	*12*	12.4	100.0
PO4-P	mg/kg	7	53	95	**65.2**	*9.2*	14.1	71.4
Ca	mg/kg	7	4492	8018	**5260**	*770*	14.6	85.7
Mg	mg/kg	7	262	430	**329**	*34.7*	10.6	85.7
Zn	mg/kg	7	0.0	4.0	**0.50**	*0.31*	62.0	85.7
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	28	1.0	5.0	**2.14**	*0.37*		
P	mg/kg	39	*62*	338	**94.0**	*10.0*	10.6	84.6
K	mg/kg	40	145	884	**216**	*14*	6.7	82.5
Ca	mg/kg	37	587	8512	**6000**	*390*	6.5	75.7
Mg	mg/kg	37	321	535	**429**	*22*	5.1	73.0
Na	mg/kg	21	90	226	**143**	*14.5*	10.1	81.0
Al	mg/kg	12	4.8	88	**71**	*14*	19.8	75.0
Zn	mg/kg	31	4.6	102	**12.4**	*1.4*	11.3	87.1
Mn	mg/kg	29	149	658	**400**	*50*	12.5	72.4
Fe	mg/kg	28	35.9	232	**65**	*6.6*	10.2	71.4
Cu	mg/kg	29	0.30	2.7	**1.76**	*0.16*	9.1	62.1
B	mg/kg	24	0.09	3.7	**3.00**	*0.43*	14.3	79.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98113**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD[1]**	**RMD %**	**% Values < WL[2]**
Cations								
K- Bicarb.	mg/kg	15	100	196	**160**	*29*	18.3	100.0
K Modified Morgan	mg/kg	5	103	168	**141**	*22*	15.6	100.0
Ca Modified Morgan	mg/kg	4	739	8761	**7200**	*900*	12.5	75.0
Micronutrients								
Zn - DTPA	mg/kg	82	1.91	43.0	**4.19**	*0.39*	9.2	84.1
Mn - DTPA	mg/kg	75	4.2	189	**15.4**	*3.4*	21.9	86.7
Fe - DTPA	mg/kg	76	1.2	42	**7.0**	*1.4*	20.3	86.8
Cu - DTPA	mg/kg	75	0.45	2.0	**0.79**	*0.09*	11.4	84.0
Zn - HCl	mg/kg	14	0.4	15	**5.75**	*4.09*	71.2	100.0
Mn-H3PO4	mg/kg	6	29	81	**53.0**	*15.6*	29.5	100.0
Cl - Ca(NO3)2 Extr.	mg/kg	14	30	82	**44.0**	*4.6*	10.4	64.3
B - Hot Water	mg/kg	61	0.03	2.8	**1.00**	*0.31*	31.0	91.8
Soil Organic Matter								
Soil Kjeldahl N	%	36	0.03	0.18	**0.12**	*0.010*	8.1	86.1
Soil TN (combustion)	%	30	0.05	0.37	**0.13**	*0.012*	9.2	80.0
Soil TOC (combustion)	%	22	0.87	1.6	**1.31**	*0.16*	12.2	95.2
SOM - Walkley-Black	%	63	0.9	3.3	**2.20**	*0.20*	9.1	84.1
SOM - LOI (Raw Values)	%	62	1.0	5.9	**2.40**	*0.3*	12.9	80.6
CaCO3 Content	%	24	0.1	23.1	**2.42**	*0.60*	24.8	83.3
Soil CEC	cmol/kg	35	6.4	44.8	**12.8**	*2.1*	16.4	82.9
Particle Size Analysis								
Sand 2000 - 50 um	%	49	46.0	80.0	**65.0**	*4.0*	6.2	89.8
Silt 50 - 2 um	%	49	6.0	34.0	**22.5**	*2.5*	11.1	75.5
Clay 2 - 0 um	%	49	4.7	23.7	**12.0**	*2.2*	18.3	100.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98114**

		Sample	Descriptive	Statistics				Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	41	26.0	47.0	**34.3**	*3.4*	9.9	97.6
pH - sp	Unit	49	7.3	8.4	**7.80**	*0.10*	1.3	87.8
ECe - sp	dS/m	50	0.02	2.0	**0.42**	*0.08*	18.1	84.3
HCO3 - sp	mmolc/L	19	1.2	6.5	**3.0**	*0.66*	22.1	73.7
Ca - sp	mmolc/L	45	0.1	6.0	**2.5**	*0.56*	22.4	88.9
Mg - sp	mmolc/L	45	0.1	2.7	**1.2**	*0.20*	16.7	82.2
Na - sp	mmolc/L	45	0.0	32	**0.53**	*0.15*	28.2	80.0
SAR - sp	value	37	0.0	33	**0.4**	*0.11*	26.3	76.3
Cl - sp	mmolc/L	22	0.16	0.9	**0.34**	*0.09*	26.5	80.0
SO4 - sp	mmolc/L	28	0.02	3.1	**0.32**	*0.21*	65.6	93.1
B - sp	mg/L	23	0.04	0.40	**0.13**	*0.03*	23.1	87.0
Soil EC								
Soil EC (1:1)	(dS/m)	38	0.18	200	**0.29**	*0.04*	12.3	79.5
Soil EC (1:2)	(dS/m)	37	0.01	150	**0.18**	*0.04*	22.2	78.9
Soil pH								
pH (1:1)	Unit	76	5.16	9.00	**8.26**	*0.13*	1.6	90.0
pH (1:2)	Unit	37	6.48	8.70	**8.30**	*0.17*	2.0	86.8
pH (1:1) 0.01 M CaCl2	Unit	15	7.20	8.20	**7.68**	*0.10*	2.2	80.0
pH (1:2) 0.01 M CaCl2	Unit	5	7.59	7.77	**7.69**	*0.08*	1.0	
Buffer pH								
SMP Buffer pH	Unit	41	7.10	8.10	**7.55**	*0.05*	0.7	76.2
Adams-Evans Buf pH	Unit	7	7.69	8.00	**7.84**	*0.04*	0.5	75.0
Woodruff Buf. pH	Unit	8	0.00	7.25	**7.10**	*0.10*	1.4	100.0
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	57	1.5	62.4	**2.8**	*0.8*	28.3	93.2
ISE	mg/kg	29	1.4	59.5	**4.2**	*1.6*	37.1	87.5
CTA	mg/kg	4	0.0	3.0	**1.6**	*0.7*	43.8	83.3
Ion Chromatography	mg/kg	6	1.4	29.0	**1.9**	*0.5*	26.3	60.0
Other	mg/kg	9	0.7	8.0	**2.5**	*0.5*	20.0	80.0
NH4 - N (KCl Extr.)	mg/kg	43	1.4	18	**3.8**	*0.8*	21.3	72.3

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98114**

		Sample	Descriptive Statistics						Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**	**Lab ID**
Phosphorus and Sulfur									
PO4-P Bray P1 (1:10)	mg/kg	52	3	96	**24.0**	*3.3*	13.8	78.0	
PO4-P Bray P1 (1:7)	mg/kg	9	6.3	22.0	**20.0**	*1.0*	5.0	54.5	
PO4-P Olsen/Bicarb	mg/kg	70	3.0	150	**7.2**	*1.2*	16.1	84.0	
PO4-P AB-DTPA	mg/kg	3	2.5	6.0	**3.3**	*0.8*	25.1	66.7	
PO4-P M. Morgan	mg/kg	7	25	254	**46.0**	*7.6*	16.5	66.7	
SO4 - S (PO4 Extr.)	mg/kg	59	0	55	**4.4**	*2.4*	54.5	75.9	
Ammonium Acetate Bases									
K	mg/kg	87	6	975	**476**	*32*	6.6	82.4	
Ca	mg/kg	84	351	55000	**4450**	*545*	12.2	77.3	
Mg	mg/kg	84	50	5484	**520**	*40*	7.7	84.1	
Na	mg/kg	66	1.0	269	**28**	*9*	30.8	81.9	
Mehlich-1 Multi Element									
Soil Scoop Mass	g	7	5	6	**5.0**				
K	mg/kg	7	153	223	**181**	*20*	11.0	100.0	
PO4-P	mg/kg	7	43	64	**53.4**	*4.4*	8.2	100.0	
Ca	mg/kg	7	4298	7773	**5240**	*783*	14.9	85.7	
Mg	mg/kg	7	364	570	**436**	*46.3*	10.6	85.7	
Zn	mg/kg	6	0.0	0.2	**0.04**	*0.02*	50.6	85.7	
Mehlich-3 Mult-Element									
Soil Scoop Mass	g	28	1.0	5	**2.03**	*0.37*			
P	mg/kg	39	34	196	**44.0**	*4.0*	9.1	87.2	
K	mg/kg	40	402	2332	**502**	*21*	4.2	72.5	
Ca	mg/kg	37	575	8357	**5700**	*384*	6.7	89.2	
Mg	mg/kg	37	340	873	**711**	*42*	5.9	86.5	
Na	mg/kg	19	18	61	**26.4**	*3.8*	14.4	71.4	
Al	mg/kg	12	56	344	**253**	*51*	20.2	100.0	
Zn	mg/kg	31	0.8	4.4	**1.40**	*0.29*	20.7	90.3	
Mn	mg/kg	29	49.0	179	**118**	*11*	9.6	72.4	
Fe	mg/kg	28	18.0	52	**29**	*4.6*	15.6	89.3	
Cu	mg/kg	29	0.87	2.5	**1.53**	*0.22*	14.1	72.4	
B	mg/kg	24	0.30	2.5	**1.75**	*0.33*	18.9	75.0	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98114**

		Sample	Descriptive Statistics						Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**	**Lab ID**
Cations									
K- Bicarb.	mg/kg	12	274	451	**389**	*18*	4.7	93.3	
K Modified Morgan	mg/kg	4	184	454	**317**	*90*	28.4	100.0	
Ca Modified Morgan	mg/kg	3	10788	12300	**12200**	*94*	0.8	50.0	
Micronutrients									
Zn - DTPA	mg/kg	77	0.10	1.4	**0.40**	*0.09*	22.5	89.0	
Mn - DTPA	mg/kg	70	1.1	58	**3.6**	*1.0*	28.9	89.3	
Fe - DTPA	mg/kg	71	*0.4*	*10*	**1.6**	*0.4*	26.6	78.9	
Cu - DTPA	mg/kg	70	0.37	2.0	**0.60**	*0.10*	16.7	86.7	
Zn - HCl	mg/kg	14	0.1	3	**1.25**	*0.71*	56.4	92.9	
Mn-H3PO4	mg/kg	6	0.6	6.8	**3.8**	*1.0*	27.3	66.7	
Cl - Ca(NO3)2 Extr.	mg/kg	14	2.8	20	**5.2**	*1.6*	31.9	85.7	
B - Hot Water	mg/kg	59	0.0	1.3	**0.76**	*0.19*	24.6	90.2	
Soil Organic Matter									
Soil Kjeldahl N	%	31	0.03	0.3	**0.10**	*0.010*	9.5	83.3	
Soil TN (combustion)	%	29	0.07	0.9	**0.11**	*0.018*	16.7	86.7	
Soil TOC (combustion)	%	20	0.57	1.8	**1.58**	*0.23*	14.6	57.1	
SOM - Walkley-Black	%	59	0.7	3.4	**1.60**	*0.21*	13.1	81.0	
SOM - LOI (Raw Values)	%	60	1.6	7	**2.2**	*0.4*	17.8	80.6	
CaCO3 Content	%	24	0.1	10.1	**7.95**	*0.90*	11.3	83.3	
Soil CEC	cmol/kg	31	3.5	51.2	**17.6**	*2.1*	11.9	85.7	
Particle Size Analysis									
Sand 2000 - 50 um	%	45	22.5	70.0	**37.5**	*3.3*	8.9	77.6	
Silt 50 - 2 um	%	45	6.0	50.1	**41.3**	*3.3*	7.9	79.6	
Clay 2 - 0 um	%	45	6.0	35.0	**21.0**	*3.0*	14.3	81.6	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98115**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	41	18.0	63.1	**48.3**	*3.9*	8.0	87.8
pH - sp	Unit	49	5.8	7.9	**6.50**	*0.20*	3.1	87.8
ECe - sp	dS/m	51	0.03	1.0	**0.34**	*0.05*	14.7	78.4
HCO3 - sp	mmolc/L	19	0.6	3.2	**2.0**	*0.53*	26.8	94.7
Ca - sp	mmolc/L	45	0.2	5.6	**1.9**	*0.44*	22.7	91.1
Mg - sp	mmolc/L	45	0.1	1.5	**0.68**	*0.11*	16.2	84.4
Na - sp	mmolc/L	45	0.02	35	**0.30**	*0.21*	68.3	86.7
SAR - sp	value	35	0.02	37	**0.24**	*0.18*	75.0	86.8
Cl - sp	mmolc/L	21	*0.09*	*0.6*	**0.22**	*0.10*	45.5	84.0
SO4 - sp	mmolc/L	28	0.0	4.3	**0.50**	*0.12*	23.2	79.3
B - sp	mg/L	22	0.04	0.32	**0.09**	*0.02*	17.6	69.6
Soil EC								
Soil EC (1:1)	(dS/m)	38	0.16	67	**0.21**	*0.02*	9.5	77.3
Soil EC (1:2)	(dS/m)	36	0.01	120	**0.13**	*0.03*	22.3	76.3
Soil pH								
pH (1:1)	Unit	76	6.11	7.10	**6.71**	*0.08*	1.2	88.8
pH (1:2)	Unit	36	6.16	7.40	**6.84**	*0.12*	1.8	89.5
pH (1:2) 0.01 M CaCl2	Unit	16	5.80	7.10	**6.20**	*0.16*	2.6	86.7
pH (1:2) 0.01 M CaCl2	Unit	5	5.86	6.34	**6.11**	*0.07*	1.1	
Buffer pH								
SMP Buffer pH	Unit	46	6.76	7.60	**7.00**	*0.07*	1.0	78.6
Adams-Evans Buf pH	Unit	8	7.53	7.70	**7.64**	*0.02*	0.3	75.0
Woodruff Buf. pH	Unit	11	1.00	7.04	**6.81**	*0.08*	1.2	71.4
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	58	0.9	62.7	**7.6**	*0.8*	9.9	83.1
ISE	mg/kg	30	1.3	15.6	**7.4**	*1.4*	18.5	81.3
CTA	mg/kg	5	7.0	9.9	**8.5**	*1.5*	17.2	100.0
Ion Chromatography	mg/kg	6	7.0	27.0	**8.9**	*1.4*	15.9	80.0
Other	mg/kg	9	3.3	13.0	**8.9**	*1.3*	14.6	70.0
NH4 - N (KCl Extr.)	mg/kg	43	2.6	20	**4.9**	*1.1*	22.4	78.7

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98115**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD[1]**	**RMD %**	**% Values < WL[2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	52	3	30	**15.0**	*1.0*	6.7	72.0
PO4-P Bray P1 (1:7)	mg/kg	8	9.0	15.0	**13.0**	*1.2*	9.2	
PO4-P Olsen/Bicarb	mg/kg	68	2.0	22	**8.5**	*1.2*	14.2	85.3
PO4-P AB-DTPA	mg/kg	3	2	7	**2.3**	*0.2*	10.3	
PO4-P M. Morgan	mg/kg	8	3	17	**4.0**	*0.9*	21.3	
SO4 - S (PO4 Extr.)	mg/kg	57	0	30	**4.0**	*2.0*	50.0	93.1
Ammonium Acetate Bases								
K	mg/kg	89	43	925	**495**	*28*	5.7	79.1
Ca	mg/kg	85	240	12300	**2560**	*154*	6.0	81.8
Mg	mg/kg	85	7	1951	**315**	*21*	6.7	80.7
Na	mg/kg	67	0	243	**14**	*9*	64.3	79.2
Mehlich-1 Multi Element								
Soil Scoop Mass	g	7	5	6	**5.0**			
K	mg/kg	7	265	381	**314**	*31*	10.0	100.0
PO4-P	mg/kg	7	17	25	**22.0**	*1.0*	4.5	71.4
Ca	mg/kg	7	2125	3736	**2250**	*120*	5.3	71.4
Mg	mg/kg	7	245	348	**279**	*14.0*	5.0	85.7
Zn	mg/kg	7	1	2	**1.50**	*0.14*	9.3	71.4
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	28	0.9	5	**2.00**	*0.35*		
P	mg/kg	39	14	76	**21.0**	*2.9*	13.6	89.7
K	mg/kg	40	402	2252	**499**	*21*	4.1	85.0
Ca	mg/kg	37	2413	3544	**2800**	*99*	3.5	81.1
Mg	mg/kg	37	277	423	**341**	*14*	4.1	83.8
Na	mg/kg	19	4	45	**10.4**	*3.9*	37.5	71.4
Al	mg/kg	12	526	778	**670**	*34*	5.1	83.3
Zn	mg/kg	31	1.2	23	**2.49**	*0.28*	11.0	67.7
Mn	mg/kg	29	42.0	167	**100**	*10*	10.0	82.8
Fe	mg/kg	28	46.0	154	**103**	*10*	9.8	71.4
Cu	mg/kg	29	0.80	2.9	**1.20**	*0.15*	12.5	72.4
B	mg/kg	24	0.00	1.9	**1.04**	*0.18*	17.3	79.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98115**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	7	323	480	**425**	*55*	12.9	100.0
K Modified Morgan	mg/kg	4	266	518	**393**	*95*	24.1	100.0
Ca Modified Morgan	mg/kg	3	2623	2974	**2740**	*120*	4.4	100.0
Micronutrients								
Zn - DTPA	mg/kg	76	0.56	2.0	**1.29**	*0.10*	7.4	81.7
Mn - DTPA	mg/kg	69	16.9	58	**37.0**	*4.3*	11.6	86.7
Fe - DTPA	mg/kg	70	8.8	94	**31.0**	*3.0*	9.5	85.5
Cu - DTPA	mg/kg	69	0.31	1.4	**0.60**	*0.09*	15.0	85.3
Zn - HCl	mg/kg	14	0.6	3.8	**2.55**	*0.40*	15.7	92.9
Mn-H3PO4	mg/kg	6	10	39	**32.1**	*3.4*	10.5	83.3
Cl - Ca(NO3)2 Extr.	mg/kg	14	1.5	20	**3.0**	*1.0*	32.2	64.3
B - Hot Water	mg/kg	60	0.0	2.3	**0.86**	*0.22*	25.6	91.8
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.11	0.25	**0.20**	*0.011*	5.3	66.7
Soil TN (combustion)	%	30	0.09	0.61	**0.21**	*0.020*	9.6	80.0
Soil TOC (combustion)	%	22	1.83	3.0	**2.24**	*0.08*	3.5	90.5
SOM - Walkley-Black	%	58	1.7	5.5	**3.83**	*0.22*	5.8	79.4
SOM - LOI (Raw Values)	%	61	1.6	9.0	**4.1**	*0.4*	9.8	75.8
CaCO3 Content	%	20	0.0	1.7	**0.35**	*0.44*	127.5	100.0
Soil CEC	cmol/kg	30	12.6	33.2	**20.5**	*3.5*	16.9	91.4
Particle Size Analysis								
Sand 2000 - 50 um	%	46	5.0	72.0	**18.0**	*4.5*	25.0	81.6
Silt 50 - 2 um	%	46	4.0	70.6	**59.0**	*4.5*	7.6	81.6
Clay 2 - 0 um	%	46	5.0	33.7	**22.3**	*4.0*	18.0	91.8

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98116**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	18.3	70.0	**22.7**	*2.5*	11.1	90.2
pH - sp	Unit	46	3.7	6.8	**4.59**	*0.17*	3.6	71.4
ECe - sp	dS/m	46	0.04	2.5	**0.30**	*0.07*	23.3	84.3
HCO3 - sp	mmolc/L	16	0.0	2.0	**0.64**	*0.33*	52.0	94.7
Ca - sp	mmolc/L	42	0.0	4.0	**0.50**	*0.18*	36.0	86.7
Mg - sp	mmolc/L	42	0.0	4.0	**0.30**	*0.10*	33.3	88.9
Na - sp	mmolc/L	42	0.0	30	**1.2**	*0.31*	25.5	88.9
SAR - sp	value	34	0.0	50	**1.9**	*0.40*	20.4	81.6
Cl - sp	mmolc/L	20	0.21	10	**0.92**	*0.21*	22.4	80.0
SO4 - sp	mmolc/L	28	0.06	4.1	**0.65**	*0.22*	33.3	86.2
B - sp	mg/L	18	0.02	0.90	**0.06**	*0.02*	33.3	73.9
Soil EC								
Soil EC (1:1)	(dS/m)	35	0.03	20	**0.08**	*0.03*	32.9	81.8
Soil EC (1:2)	(dS/m)	35	0.0	50.0	**0.05**	*0.02*	40.0	81.6
Soil pH								
pH (1:1)	Unit	71	4.03	5.80	**5.00**	*0.16*	3.1	86.3
pH (1:2)	Unit	35	4.08	7.10	**5.06**	*0.14*	2.8	76.3
pH (1:2) 0.01 M CaCl2	Unit	14	3.43	5.90	**4.00**	*0.16*	4.0	80.0
pH (1:2) 0.01 M CaCl2	Unit	4	3.77	3.99	**3.80**	*0.01*	0.4	80.0
Buffer pH								
SMP Buffer pH	Unit	59	6.20	7.20	**6.65**	*0.15*	2.3	90.5
Adams-Evans Buf pH	Unit	10	7.60	7.70	**7.64**	*0.02*	0.3	87.5
Woodruff Buf. pH	Unit	11	5.00	6.78	**6.60**	*0.09*	1.4	85.7
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	53	0.6	69.8	**2.1**	*0.8*	36.9	89.8
ISE	mg/kg	27	0.9	10.9	**2.0**	*0.8*	40.0	87.5
CTA	mg/kg	5	1.0	1.9	**1.5**	*0.5*	31.0	83.3
Ion Chromatography	mg/kg	6	0.7	28.0	**1.3**	*0.4*	32.9	60.0
Other	mg/kg	9	1.5	5.3	**3.0**	*0.9*	30.0	90.0
NH4 - N (KCl Extr.)	mg/kg	37	2.6	37	**20.6**	*4.0*	19.2	85.1

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98116**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	47	1.0	21	**8.0**	*2.0*	25.0	92.0
PO4-P Bray P1 (1:7)	mg/kg	9	2.4	15.0	**7.0**	*1.0*	14.3	72.7
PO4-P Olsen/Bicarb	mg/kg	56	1.6	24	**6.0**	*1.4*	23.3	88.0
PO4-P AB-DTPA	mg/kg	3	2.2	6.2	**2.9**	*0.8*	26.6	66.7
PO4-P M. Morgan	mg/kg	5	1.0	4.0	**2.0**	*0.7*	35.0	88.9
SO4 - S (PO4 Extr.)	mg/kg	54	0.0	75	**4.8**	*1.9*	39.6	94.8
Ammonium Acetate Bases								
K	mg/kg	84	0.0	150	**19**	*5*	24.3	81.3
Ca	mg/kg	79	5.0	1231	**103**	*36*	34.8	75.0
Mg	mg/kg	79	2.1	156	**25**	*7*	27.7	80.7
Na	mg/kg	63	0.0	288	**23**	*11*	47.8	87.5
Mehlich-1 Multi Element								
Soil Scoop Mass	g	7	5	6	**5.0**			
K	mg/kg	7	11	17	**13**	2	13.1	100.0
PO4-P	mg/kg	7	0.0	9.0	**3.0**	*1.2*	40.5	85.7
Ca	mg/kg	7	24	107	**87**	*18*	20.4	71.4
Mg	mg/kg	7	18	30	**24**	*3.2*	13.2	100.0
Zn	mg/kg	7	0.2	1.0	**0.60**	*0.20*	33.3	100.0
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	27	1.0	5	**2.00**	*0.39*		
P	mg/kg	36	4.00	28	**8.0**	*1.6*	20.0	87.2
K	mg/kg	37	10	176	**21**	*4.5*	22.0	82.5
Ca	mg/kg	35	67	1020	**112**	*26*	23.2	81.1
Mg	mg/kg	35	20	130	**28**	*5*	19.5	81.1
Na	mg/kg	18	12	61	**19.8**	*3.8*	19.2	71.4
Al	mg/kg	10	327	543	**413**	*32*	7.8	83.3
Zn	mg/kg	29	0.4	2.1	**0.70**	*0.19*	27.1	87.1
Mn	mg/kg	27	2.0	8.1	**6.8**	*0.5*	7.4	86.2
Fe	mg/kg	26	85.0	343	**229**	*24*	10.3	85.7
Cu	mg/kg	24	0.14	2.6	**0.30**	*0.10*	33.3	75.9
B	mg/kg	22	0.00	1.1	**0.20**	*0.10*	50.0	79.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98116**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	3	20	33	**21**	*7*	31.0	93.3
K Modified Morgan	mg/kg	4	9	14	**11**	*2*	13.6	100.0
Ca Modified Morgan	mg/kg	3	106	197	**107**	*1*	0.9	50.0
Micronutrients								
Zn - DTPA	mg/kg	72	0.15	1.5	**0.41**	*0.09*	22.0	89.0
Mn - DTPA	mg/kg	65	3.5	15	**5.7**	*0.5*	9.4	86.7
Fe - DTPA	mg/kg	65	45	255	**115**	*23.4*	20.4	94.7
Cu - DTPA	mg/kg	65	0.02	1.0	**0.15**	*0.05*	33.3	81.3
Zn - HCl	mg/kg	13	0.0	6.6	**1.10**	*0.89*	80.9	92.9
Mn-H3PO4	mg/kg	6	4.0	7.5	**5.6**	*1.2*	20.9	100.0
Cl - Ca(NO3)2 Extr.	mg/kg	13	3.7	20	**5.6**	*1.0*	17.9	78.6
B - Hot Water	mg/kg	56	0.0	1.6	**0.30**	*0.18*	60.0	91.8
Soil Organic Matter								
Soil Kjeldahl N	%	26	0.01	0.15	**0.05**	*0.014*	26.7	83.3
Soil TN (combustion)	%	26	0.01	1.3	**0.06**	*0.019*	32.0	86.7
Soil TOC (combustion)	%	18	0.97	1.7	**1.16**	*0.07*	6.3	90.5
SOM - Walkley-Black	%	54	1.2	3.2	**2.14**	*0.32*	14.8	92.1
SOM - LOI (Raw Values)	%	56	1.5	3.7	**2.3**	*0.2*	8.7	91.9
$CaCO_3$ Content	%	18	0.0	0.8	**0.04**	*0.10*	271.4	91.7
Soil CEC	cmol/kg	28	1.2	10.0	**4.5**	*1.4*	31.5	91.4
Particle Size Analysis								
Sand 2000 - 50 um	%	41	38.0	66.0	**48.0**	2.7	5.7	81.6
Silt 50 - 2 um	%	41	24.0	54.0	**42.2**	*4.5*	10.7	93.9
Clay 2 - 0 um	%	41	2.0	22.5	**8.0**	2.2	27.5	85.7

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98117**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	39	47.2	142.0	**104.6**	*14.4*	13.8	87.8
pH - sp	Unit	49	4.2	5.6	**4.60**	*0.14*	3.0	89.8
ECe - sp	dS/m	51	0.20	4.0	**2.57**	*0.32*	12.5	82.4
HCO3 - sp	mmolc/L	18	0.0	2.0	**0.90**	*0.21*	23.3	78.9
Ca - sp	mmolc/L	44	1.2	18	**11.8**	*1.48*	12.5	88.9
Mg - sp	mmolc/L	44	0.1	11	**6.3**	*0.83*	13.3	86.7
Na - sp	mmolc/L	44	7.5	239	**10.5**	*0.85*	8.1	91.1
SAR - sp	value	37	2.5	105	**3.5**	*0.24*	6.9	89.5
Cl - sp	mmolc/L	24	8.5	284	**10.2**	*1.00*	9.8	92.0
SO4 - sp	mmolc/L	29	2.6	314	**17.1**	*2.10*	12.3	86.2
B - sp	mg/L	21	0.29	0.70	**0.43**	*0.05*	11.6	87.0
Soil EC								
Soil EC (1:1)	(dS/m)	31	0.46	500	**0.92**	*0.22*	23.9	75.0
Soil EC (1:2)	(dS/m)	44	0.12	910	**0.90**	*0.23*	25.3	68.4
Soil pH								
pH (1:1)	Unit	74	4.38	5.80	**4.80**	*0.08*	1.7	76.3
pH (1:2)	Unit	38	4.18	5.54	**4.80**	*0.10*	2.1	89.5
pH (1:2) 0.01 M CaCl2	Unit	16	4.30	4.70	**4.52**	*0.13*	2.9	100.0
pH (1:2) 0.01 M CaCl2	Unit	5	4.42	4.49	**4.47**	*0.02*	0.4	
Buffer pH								
SMP Buffer pH	Unit	64	4.36	6.30	**5.00**	*0.20*	4.0	88.1
Adams-Evans Buf pH	Unit	10	5.95	7.01	**6.10**	*0.04*	0.6	62.5
Woodruff Buf. pH	Unit	13	5.00	18.0	**5.40**	*0.11*	2.0	57.1
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	57	3.8	70.3	**8.8**	*2.6*	29.6	98.3
ISE	mg/kg	31	1.5	19.1	**6.0**	*2.7*	45.0	81.3
CTA	mg/kg	5	10.6	17.0	**13.7**	*1.7*	12.4	100.0
Ion Chromatography	mg/kg	5	7.9	26.0	**11.0**	*3.0*	26.9	80.0
Other	mg/kg	10	2.7	42.4	**7.5**	*3.6*	48.0	90.0
NH4 - N (KCl Extr.)	mg/kg	43	8.7	89	**53.0**	*11.2*	21.0	87.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98117**

Analysis - cont.	Units	Sample No.	Descriptive Statistics Min	Max	Median	MAD [1]	RMD %	% Values < WL [2]	Lab ID
Phosphorus and Sulfur									
PO4-P Bray P1 (1:10)	mg/kg	51	17	261	**141**	*47.8*	33.9	96.0	
PO4-P Bray P1 (1:7)	mg/kg	9	43	162	**91.0**	*21.0*	23.1	90.9	
PO4-P Olsen/Bicarb	mg/kg	63	1.1	277	**104**	*35.4*	34.0	89.3	
PO4-P AB-DTPA	mg/kg	3	8	39	**10.4**	*2.5*	23.9	66.7	
PO4-P M. Morgan	mg/kg	8	8	151	**14.7**	*5.9*	40.3		
SO4 - S (PO4 Extr.)	mg/kg	58	25	600	**149**	*53.1*	35.6	79.3	
Ammonium Acetate Bases									
K	mg/kg	90	18	475	**226**	*79*	35.0	97.8	
Ca	mg/kg	85	175	8600	**2170**	*760*	35.0	90.9	
Mg	mg/kg	85	9	1448	**371**	*131*	35.2	94.3	
Na	mg/kg	69	28	790	**394**	*170*	43.1	100.0	
Mehlich-1 Multi Element									
Soil Scoop Mass	g	7	3	5	**5.0**				
K	mg/kg	7	88	204	**136**	*25*	18.4	85.7	
PO4-P	mg/kg	7	6	61	**20.0**	*13.5*	67.7	85.7	
Ca	mg/kg	7	1957	5036	**2940**	*760*	25.9	85.7	
Mg	mg/kg	7	45	602	**425**	*170*	40.0	100.0	
Zn	mg/kg	7	5	24	**6.00**	*0.64*	10.7	71.4	
Mehlich-3 Mult-Element									
Soil Scoop Mass	g	28	0.5	5	**1.33**	*0.38*			
P	mg/kg	39	69	432	**153**	*23.4*	15.3	74.4	
K	mg/kg	40	33	682	**181**	*19*	10.6	62.5	
Ca	mg/kg	37	1125	4742	**2160**	*279*	12.9	64.9	
Mg	mg/kg	37	260	649	**327**	*34*	10.4	64.9	
Na	mg/kg	20	245	663	**357**	*77*	21.5	71.4	
Al	mg/kg	12	1388	2440	**1600**	*73*	4.6	75.0	
Zn	mg/kg	31	2.1	11	**5.30**	*0.64*	12.1	74.2	
Mn	mg/kg	29	11.0	330	**35**	*7.0*	19.9	58.6	
Fe	mg/kg	28	181	1145	**452**	*44*	9.6	71.4	
Cu	mg/kg	29	0.20	3.6	**1.20**	*0.41*	34.2	82.8	
B	mg/kg	24	0.0	4.8	**0.90**	*0.30*	33.3	70.8	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98117**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	4	235	320	**249**	*12*	4.6	93.3
K Modified Morgan	mg/kg	4	191	338	**254**	*58*	22.6	100.0
Ca Modified Morgan	mg/kg	3	3644	3937	**3724**	*80*	2.1	50.0
Micronutrients								
Zn - DTPA	mg/kg	78	0.51	9.2	**2.75**	*1.52*	55.3	90.2
Mn - DTPA	mg/kg	71	1.2	167	**8.8**	*2.8*	31.8	82.7
Fe - DTPA	mg/kg	70	44	1211	**376**	*65*	17.3	63.2
Cu - DTPA	mg/kg	71	0.02	2.7	**0.80**	*0.40*	50.0	96.0
Zn - HCl	mg/kg	14	0.4	16	**5.75**	*2.85*	49.6	92.9
Mn-H3PO4	mg/kg	6	18	47	**39.3**	*5.8*	14.6	83.3
Cl - Ca(NO3)2 Extr.	mg/kg	14	77.0	420	**181**	*56.4*	31.2	
B - Hot Water	mg/kg	61	0.27	6	**1.92**	*0.67*	34.9	88.5
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.03	1.35	**1.14**	*0.086*	7.5	83.3
Soil TN (combustion)	%	30	0.51	4.03	**1.28**	*0.040*	3.1	76.7
Soil TOC (combustion)	%	21	2.1	25.6	**22.5**	*0.67*	3.0	61.9
SOM - Walkley-Black	%	48	2.1	52.7	**28.1**	*6.8*	24.2	88.4
SOM - LOI (Raw Values)	%	62	4.2	50	**40.2**	*3.8*	9.3	74.2
CaCO3 Content	%	21	0.0	36.3	**0.10**	*0.53*	530.0	91.7
Soil CEC	cmol/kg	31	22.5	118	**74.6**	*12.3*	16.5	77.1
Particle Size Analysis								
Sand 2000 - 50 um	%	44	5.9	73.0	**44.5**	*4.5*	10.1	75.5
Silt 50 - 2 um	%	44	10.0	48.8	**32.0**	*5.1*	15.8	91.8
Clay 2 - 0 um	%	44	6.0	60.6	**23.2**	*5.2*	22.2	89.8

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98118**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	40	24.5	68.0	**40.0**	*3.9*	9.8	85.4
pH - sp	Unit	49	5.1	6.7	**5.71**	*0.19*	3.3	87.8
ECe - sp	dS/m	50	0.09	3.0	**1.20**	*0.16*	12.9	76.5
HCO3 - sp	mmolc/L	18	0.0	5.7	**1.1**	*0.43*	41.0	89.5
Ca - sp	mmolc/L	44	0.5	9	**5.4**	*1.02*	18.8	86.7
Mg - sp	mmolc/L	44	0.1	10	**4.8**	*1.09*	22.6	86.7
Na - sp	mmolc/L	44	0.25	119	**0.54**	*0.18*	33.4	84.4
SAR - sp	value	36	0.10	71	**0.31**	*0.14*	47.2	78.9
Cl - sp	mmolc/L	23	1.81	137	**4.7**	*0.46*	9.9	80.0
SO4 - sp	mmolc/L	30	0.0	14	**1.40**	*0.29*	20.4	75.9
B - sp	mg/L	21	0.09	0.40	**0.14**	*0.03*	21.4	87.0
Soil EC								
Soil EC (1:1)	(dS/m)	35	0.26	112	**0.45**	*0.06*	13.3	79.5
Soil EC (1:2)	(dS/m)	36	0.03	320	**0.30**	*0.05*	14.9	71.1
Soil pH								
pH (1:1)	Unit	74	4.90	10.72	**5.90**	*0.07*	1.2	87.5
pH (1:2)	Unit	35	5.42	11.10	**5.94**	*0.09*	1.5	81.6
pH (1:2) 0.01 M CaCl2	Unit	15	5.35	5.70	**5.52**	*0.08*	1.5	93.3
pH (1:2) 0.01 M CaCl2	Unit	5	5.43	5.53	**5.47**	*0.02*	0.4	
Buffer pH								
SMP Buffer pH	Unit	63	6.00	6.91	**6.40**	*0.10*	1.6	78.6
Adams-Evans Buf pH	Unit	9	7.15	7.51	**7.36**	*0.04*	0.5	62.5
Woodruff Buf. pH	Unit	12	6.20	6.70	**6.41**	*0.11*	1.7	71.4
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	57	10.0	127	**31.0**	*3.6*	11.6	89.8
ISE	mg/kg	30	6.5	42.1	**28.9**	*3.4*	11.8	65.6
CTA	mg/kg	5	31.5	40.0	**35.8**	*4.3*	11.9	83.3
Ion Chromatography	mg/kg	6	32.0	67.0	**35.9**	*3.9*	10.8	
Other	mg/kg	9	13.5	41.0	**31.0**	*2.2*	7.2	50.0
NH4 - N (KCl Extr.)	mg/kg	41	2.7	26	**11.0**	*1.3*	11.8	74.5

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98118**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	51	2.6	45	**23.0**	*2.0*	8.7	86.0
PO4-P Bray P1 (1:7)	mg/kg	8	11.0	26.0	**15.5**	*1.7*	11.0	
PO4-P Olsen/Bicarb	mg/kg	62	0.0	89	**9.0**	*2.0*	22.2	80.0
PO4-P AB-DTPA	mg/kg	3	2.0	6.6	**2.3**	*0.3*	12.4	
PO4-P M. Morgan	*mg/kg*	8	1.6	19	**2.2**	*0.5*	21.2	
SO4 - S (PO4 Extr.)	mg/kg	57	0.0	458	**14.0**	*4.5*	32.1	84.5
Ammonium Acetate Bases								
K	mg/kg	87	28	431	**281**	*31*	11.0	94.5
Ca	mg/kg	83	207	19780	**2260**	*230*	10.2	81.8
Mg	mg/kg	83	9.0	2828	**550**	*69*	12.5	88.6
Na	mg/kg	66	0.0	137	**23**	*11*	47.8	84.7
Mehlich-1 Multi Element								
Soil Scoop Mass	g	7	5	5	**5.0**			
K	mg/kg	7	162	234	**211**	*13*	6.2	71.4
PO4-P	mg/kg	7	4.3	9.0	**5.5**	*0.5*	9.1	57.1
Ca	mg/kg	7	2359	4405	**2960**	*400*	13.5	71.4
Mg	mg/kg	7	103	798	**560**	*74*	13.2	57.1
Zn	mg/kg	7	2.3	3.0	**2.83**	*0.13*	4.6	71.4
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	28	0.9	5	**2.00**	*0.36*		
P	mg/kg	38	20	94	**27.0**	*2.9*	10.7	82.1
K	mg/kg	40	234	1162	**286**	*18*	6.1	85.0
Ca	mg/kg	37	2337	3114	**2590**	*113*	4.3	83.8
Mg	mg/kg	37	520	741	**614**	*24*	3.9	73.0
Na	mg/kg	19	13	48	**18.0**	*5.0*	27.8	71.4
Al	mg/kg	12	8.8	1090	**858**	*67*	7.8	75.0
Zn	mg/kg	31	1.5	6.8	**3.90**	*0.38*	9.6	74.2
Mn	mg/kg	29	1.0	5.1	**3.4**	*0.40*	11.8	75.9
Fe	mg/kg	28	130.0	468	**275**	*31*	11.4	67.9
Cu	mg/kg	28	0.40	2.0	**0.85**	*0.18*	21.2	86.2
B	mg/kg	24	0.00	1.5	**0.60**	*0.14*	23.3	75.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

November 2, 1998 — **3rd Quarter Results** — **Soil ID - 98118**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	3	278	300	**299**	*14*	4.7	66.7
K Modified Morgan	mg/kg	4	174	309	**248**	*45*	18.0	80.0
Ca Modified Morgan	mg/kg	3	197	2999	**2296**	*703*	30.6	50.0
Micronutrients								
Zn - DTPA	mg/kg	75	1.40	3.6	**2.02**	*0.22*	10.9	74.4
Mn - DTPA	mg/kg	68	1.6	19	**3.7**	*0.3*	9.2	85.3
Fe - DTPA	mg/kg	67	6.0	416	**135**	*31*	23.1	88.2
Cu - DTPA	mg/kg	68	0.04	1.3	**0.30**	*0.10*	33.3	86.7
Zn - HCl	mg/kg	14	0.1	9.0	**4.20**	*0.60*	14.3	78.6
Mn-H3PO4	mg/kg	6	2.5	3.9	**3.1**	*0.5*	15.6	83.3
Cl - Ca(NO3)2 Extr.	mg/kg	14	58.0	116	**75.2**	*12.7*	16.8	
B - Hot Water	mg/kg	59	0.16	2.54	**0.63**	*0.20*	31.7	83.6
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.21	0.58	**0.420**	*0.059*	14.0	88.9
Soil TN (combustion)	%	29	0.20	1.37	**0.477**	*0.027*	5.6	86.7
Soil TOC (combustion)	%	21	3.8	9.3	**5.78**	*0.40*	7.0	76.2
SOM - Walkley-Black	%	52	2.0	12.5	**8.70**	*1.20*	13.8	90.5
SOM - LOI (Raw Values)	%	60	6.7	17	**9.8**	*1.0*	10.1	83.9
CaCO3 Content	%	21	0.0	4.1	**0.68**	*0.35*	50.7	91.7
Soil CEC	cmol/kg	30	5.1	44.8	**26.3**	*5.0*	19.0	82.9
Particle Size Analysis								
Sand 2000 - 50 um	%	44	6.4	83.0	**67.0**	*4.0*	6.0	87.8
Silt 50 - 2 um	%	44	8.0	33.0	**21.0**	*3.0*	14.3	79.6
Clay 2 - 0 um	%	44	0.0	21.0	**12.0**	3.0	25.0	85.7

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.