



Magruder Fertilizer Proficiency Testing

METHOD Summary Statistics

260711 (Compost Blend)



Issue Date: 8/31/2026

Code	Analyte / Method (Guarantees in green)	¹ Trueness (Lab Value)					² Thompson Horwitz ² IA		³ Precision (range)	
		Robust Mean	n used	Robust Uncert.	Robust StDev	Robust %RSD	%RSD	%RSD	Robust Mean	n used
001.99	Ammoniacal N/Other (%)	0.007	1						0.0001	1
005.99	Urea N/Other (%)	0.651	1						0.012	1
008.10	Biuret/Spectrophotometric (as Biuret) (%)	1.15	1						0.02	1
010.60	Total N/Combustion (0.3%)	0.3355	34	0.0127	0.0591	17.6	4.7	62.67	0.0218	30
010.99	Total N/Other (0.3%)	0.33	6	0.0195	0.0382	11.6	4.71	63.73	0.0125	6
010.12	Total N/Salicylic (0.3%)	0.2935	3	0.0117	0.0163	5.54	4.8	71.65		
020.50	Total P2O5/ICP (%)	0.4052	16	0.0176	0.0563	13.9	4.57		0.0278	16
020.20	Total P2O5/Spectrophotometric MolybdovanadoP (%)	0.5083	3	0.1667	0.2309	45.4	4.42		0.0167	3
020.99	Total P2O5/Other (%)	0.49	2		0.3818				0.04	2
020.40	Total P2O5/Automated (%)	0.2	1							
020.30	Total P2O5/Alkalimetric Quinolinium MolybdoP (%)	0.184	1						0.002	1
020.10	Total P2O5/Gravimetric Quinolinium MolybdoP (%)	0.351	1						0.012	1

Code	Analyte / Method (Guarantees in green)	¹ Trueness (Lab Value)					² Thompson Horwitz ² IA		³ Precision (range)	
		Robust Mean	n used	Robust Uncert.	Robust StDev	Robust %RSD	%RSD	%RSD	Robust Mean	n used
030.20	Citrate Insoluble P2O5/Spectrophotometric Molybdova	0.09	1							
040.99	Indirect Available P2O5/Other (0.2%)	0.26	2		0.0424				0.02	2
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citra	0.3799	4	0.0785	0.1256	33.1	4.61	67.97	0.025	3
041.51	Direct Available P2O5/ICP, Citrate-EDTA Ext. (0.2%)	0.2912	4	0.0317	0.0507	17.4	4.8	91.01		
041.50	Direct Available P2O5/ICP (0.2%)	0.3547	3	0.115	0.1594	44.9	4.66	73.34		
041.21	Direct Available P2O5/Spectrophotometric, Citrate-ED	0.3292	3	0.0215	0.0298	9.06	4.71	79.63		
041.20	Direct Available P2O5/Spectrophotometric (0.2%)	0.3305	2		0.2114				0.06	1
041.10	Direct Available P2O5/Gravimetric Quinolinium (0.2%	0.4552	2		0.035				0.005	1
041.99	Direct Available P2O5/Other (0.2%)	0.205	1						0.01	1
048.20	Water Soluble P2O5/Spectrophotometric (%)	0.02	1							
048.99	Water Soluble P2O5/Other (%)	0.182	1						0.002	1
050.99	Soluble K2O/Other (0.05%)	0.2013	18	0.0385	0.1307	64.9	5.08	87.42	0.0119	16
050.51	Soluble K2O/ICP (Citrate) (0.05%)	0.175	5	0.044	0.0788	45	5.18	100.54	0.0084	4
050.52	Soluble K2O/ICP (Citrate-EDTA) (0.05%)	0.1846	4	0.1098	0.1757	95.2	5.14	95.31	0.0048	4
050.50	Soluble K2O/ICP (Oxalate) (0.05%)	0.1916	3	0.0479	0.0664	34.6	5.11	91.83		
050.62	Soluble K2O/Flame Photometric (Citrate-EDTA) (0.05	0.1252	1						0.0117	1
050.32	Soluble K2O/AA (Citrate-EDTA) (0.05%)	0.095	1						0.01	1
050.00	Soluble K2O/STPB Oxalate (0.05%)	0.03	1						0.02	1
060.99	Water (Free)/Other (%)	38.75	2		3.182				2.5	2

Code	Analyte / Method (Guarantees in green)	¹ Trueness (Lab Value)					² Thompson Horwitz ² IA		³ Precision (range)	
		Robust Mean	n used	Robust Uncert.	Robust StDev	Robust %RSD	%RSD	%RSD	Robust Mean	n used
060.30	Water (Free)/AFPC No. 2B (105°C oven for 2 hours, 5g s	37.86	1						1.39	1
101.33	Acid Soluble Ca/ICP, 2017.02 (%)	5.512	3	0.9467	1.312	23.8	3.09		0.145	3
101.30	Acid Soluble Ca/ICP, test portion inorganic 965.09 (%)	4.438	2		0.6046				0.505	2
101.00	Acid Soluble Ca/AA, inorganic 965.09 (%)	7	1						0.4	1
121.33	Acid Soluble Mg/ICP, 2017.02 (%)	0.3045	3	0.074	0.1026	33.7	4.77		0.0217	3
121.30	Acid Soluble Mg/ICP, test portion inorganic 965.09 (%)	0.2575	2		0.0247				0.03	1
121.00	Acid Soluble Mg/AA, inorganic 965.09 (%)	0.265	1						0.03	1
121.99	Acid Soluble Mg/Other (%)	0.2574	1						0.0441	1
148.99	Total S/Other (%)	0.1634	3	0.0589	0.0815	49.9	5.24			
148.07	Total S/ICP, test portion as in 2017.02 (%)	0.21	1							
149.04	S - HNO3 soluble/ICP (%)	0.1694	1						0.0013	1
151.99	Acid Soluble As/Other (ppm)	2.695	2		0.6293				0.16	2
151.32	Acid Soluble As/ICP, 2006.03 (ppm)	2.6	1							
151.30	Acid Soluble As/ICP (ppm)	3.356	1						0.2195	1
151.33	Acid Soluble As/ICP, 2017.02 (ppm)	6.11	1						0.3225	1
151.00	Acid Soluble As/AA, test portion 2006.03 modified w/d	1.895	1						0.01	1
165.99	Acid Soluble B/Other (%)	0.0016	2		0.0007				0.0001	2
181.30	Acid Soluble Cd/ICP (ppm)	1.219	2		0.7158				0.0726	2
181.99	Acid Soluble Cd/Other (ppm)	0.804	2		0.0198				0.013	2

Code	Analyte / Method (Guarantees in green)	¹ Trueness (Lab Value)					² Thompson Horwitz		³ Precision (range)	
		Robust Mean	n used	Robust Uncert.	Robust StDev	Robust %RSD	%RSD	² IA %RSD	Robust Mean	n used
181.00	Acid Soluble Cd/AA, test portion 2006.03 modified w/d	0.165	1						0.01	1
181.32	Acid Soluble Cd/ICP, 2006.03 (ppm)	0.9	1						0.12	1
181.33	Acid Soluble Cd/ICP, 2017.02 (ppm)	1.365	1						0.0257	1
191.30	Acid Soluble Cr/ICP (ppm)	75.22	2		18.93				5.8621	2
191.99	Acid Soluble Cr/Other (ppm)	12.52	2		5.48				3.55	2
191.32	Acid Soluble Cr/ICP, 2006.03 (ppm)	10.35	1						0.7	1
191.33	Acid Soluble Cr/ICP, 2017.02 (ppm)	21.17	1						0.3714	1
202.33	Acid Soluble Co/ICP, 2017.02 (ppm)	4.003	3	0.9393	1.302	32.5	12.9		0.1927	3
202.30	Acid Soluble Co/ICP (ppm)	4.809	2		0.8146				0.13725	2
202.99	Acid Soluble Co/Other (ppm)	3.24	2		0.3536				0.37	2
202.32	Acid Soluble Co/ICP, 2006.03 (ppm)	3.145	1						0.01	1
221.99	Acid Soluble Cu/Other (%)	0.0016	2		0				0.00025	2
221.00	Acid Soluble Cu/AA, inorganic 965.09 (%)	0.0022	1						0.0003	1
221.32	Acid Soluble Cu/ICP, test portion 2006.03A-C (%)	0.0022	1						0.0002	1
221.33	Acid Soluble Cu/ICP, 2017.02 (%)	0.0027	1							
241.33	Acid Soluble Fe/ICP, 2017.02 (%)	0.8531	3	0.2314	0.3207	37.6	4.09		0.0428	3
241.99	Acid Soluble Fe/Other (%)	0.8807	2		0.1122				0.07995	2
241.00	Acid Soluble Fe/AA, inorganic 965.09 (%)	0.71	1						0.14	1
241.30	Acid Soluble Fe/ICP, test portion inorganic 965.09 (%)	0.8	1						0.02	1

Code	Analyte / Method (Guarantees in green)	¹ Trueness (Lab Value)					² Thompson Horwitz %RSD	² IA %RSD	³ Precision (range)	
		Robust Mean	n used	Robust Uncert.	Robust StDev	Robust %RSD			Robust Mean	n used
251.30	Acid Soluble Pb/ICP (ppm)	10.5	2		1.264				0.6798	2
251.99	Acid Soluble Pb/Other (ppm)	5.845	2		1.888				0.1	2
251.32	Acid Soluble Pb/ICP, 2006.03 (ppm)	4.93	1						0.04	1
251.33	Acid Soluble Pb/ICP, 2017.02 (ppm)	18.57	1						0.1578	1
261.35	Acid Soluble Mn/ICP, 2017.02 (%)	0.1299	3	0.0224	0.031	23.9	5.42			
261.99	Acid Soluble Mn/Other (%)	0.1087	2		0.0089				0.01555	2
261.30	Acid Soluble Mn/ICP, test portion 972.02a (%)	0.095	1						0.01	1
281.99	Acid Soluble Hg/Other (ppm)	0.0168	1						0.0013	1
289.99	Acid Soluble Mo/Other (ppm)	0.7185	2		0.1959				0.061	2
289.33	Acid Soluble Mo/ICP, 2017.02 (ppm)	1.129	2		0.1878				0.05565	2
289.30	Acid Soluble Mo/ICP (ppm)	3.808	1						0.2426	1
289.32	Acid Soluble Mo/ICP, 2006.03 (ppm)	0.65	1						0.02	1
291.33	Acid Soluble Ni/ICP, 2017.02 (ppm)	11.16	3	2.769	3.837	34.4	11.1		0.5929	3
291.99	Acid Soluble Ni/Other (ppm)	8.498	2		0.7036				1.065	2
291.30	Acid Soluble Ni/ICP (ppm)	180.6	2		236.6				11.06635	2
291.32	Acid Soluble Ni/ICP, 2006.03 (ppm)	8.3	1						0.8	1
301.99	Acid Soluble Se/Other (ppm)	0.64	2		0.5445				0.08	2
301.30	Acid Soluble Se/ICP (ppm)	0.2026	1						0.0067	1
301.32	Acid Soluble Se/ICP, 2006.03 (ppm)	0.635	1						0.03	1

Code	Analyte / Method (Guarantees in green)	¹ Trueness (Lab Value)					² Thompson Horwitz ² IA		³ Precision (range)	
		Robust Mean	n used	Robust Uncert.	Robust StDev	Robust %RSD	%RSD	%RSD	Robust Mean	n used
311.33	Sodium/ICP, test portion as in 2017.02 (%)	0.1111	2		0.019				0.00675	2
311.99	Sodium/Other (%)	0.115	1						0.01	1
321.33	Acid Soluble Zn/ICP, 2017.02 (%)	0.0126	3	0.0029	0.004	31.8	7.7			
321.99	Acid Soluble Zn/Other (%)	0.0114	1						0.0019	1
321.00	Acid Soluble Zn/AA, inorganic 965.09 (%)	0.0125	1						0.001	1
321.30	Acid Soluble Zn/ICP, test portion inorganic 965.09 (%)	0.01	1							
321.32	Acid Soluble Zn/ICP, test portion 2006.03A-C (%)	0.0121	1						0.001	1

1. Trueness Parameters: Statistical parameters defining the distribution of lab values which are used to evaluate how close a Lab Value is to the mean. Parameters are shown for number of observations used (n used). Method All Tests report identifies data not used. Robust statistics was employed to determine mean and standard deviation (StDev) if number of observations used (n used) ≥ 6 (blue background). Classical statistics was employed if number of observations used (n used) < 6 (no color background). %RSD is the relative standard deviation with respect to the mean ($\text{StDev}/\text{Mean} \times 100$). Uncertainty (Uncert.) is a measure of where the true population mean lies.

2. Thompson-Horwitz %RSD and IA %RSD: These are benchmark values that can be used to compare to actual variability of Lab Values (Robust %RSD). Thompson-Horwitz %RSD is a benchmark on variability from proficiency testing programs. IA %RSD is variability expected from AAPFCO investigational allowance (IA).

3. Precision Parameters: Lab's precision is estimated by the difference in 2 results reported by the lab (range). Mean of ranges are shown for number of observations used (n used). Method All Tests report identifies data not used. Robust statistics was employed to determine mean if number of observations used (n used) ≥ 6 (green background). Classical statistics was employed if number of observations used (n used) < 6 (no color background).

Appendix

Content Description of Method Summary Statistics Report

The Method Summary Statistics Report provides trueness and precision parameters from determination of analytes by specific methods. Determination of summary statistics followed protocols in ISO 13528:2015(E) using Algorithm A robust analysis (Statistical methods for use in proficiency testing by interlaboratory comparison). Robust statistics was used to determine statistical parameters for sets with 6 or more observations. Classical statistics was used for sets with 3, 4, or 5 observations. Robust statistics has an advantage of removing undesired influence of outlying data on the mean and standard deviation without removing data from the statistical analysis.

For trueness, the mean and standard deviation (StDev) are presented for the number of observations (n used). The uncertainty (Uncert.) is a measure of where the “real” value for the concentration lies around the mean with a 68% certainty (Mean $\pm$ Uncert.). The larger the number of observations, the smaller the uncertainty. The relative standard deviation (%RSD) is a percentage of the standard deviation divided by the mean. Standard deviation from Lab Values is determined by robust statistics for n used ≥ 6 or classical statistics for n used < 6 . The Thompson-Horwitz %RSD is a standard benchmark on inter-laboratory variability (Thompson, DOI: 10.1039/b000282h) that can be used to compare %RSD from Lab Values variability with Thompson-Horwitz expectation. The IA %RSD is a measure of variability expected from the AAPFCO investigational allowance (IA) where standard deviation is IA/2.33.

Precision in the data sets is estimated by the range of duplicate results reported. The robust or classical mean is presented along with the number of observations used. Any duplicate results that are exactly the same are removed in the determination of the mean range to remove undue influence of entries that may be from labs reporting one result twice.



Magruder Fertilizer Proficiency Testing

METHOD All Labs Report

260711 (Compost Blend)



Issue Date: 8/31/2026

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
Ammoniacal N/Other (%)										
001.99	Ammoniacal N/Other (%)	0524	0.0069	0.007	0.007					
Urea N/Other (%)										
005.99	Urea N/Other (%)	0524	0.645	0.657	0.651					
Biuret/Spectrophotometric (as Biuret) (%)										
008.10	Biuret/Spectrophotometric (as Biuret) (%)	0405	1.14	1.16	1.15					
Biuret/Other (%)										
008.99	Biuret/Other (%)	0498	<0.002	<0.002	<0.002					6
Total N/Salicylic (0.3 %)										
010.12	Total N/Salicylic (%)	0498	0.26	0.29	0.275	-1.14	0.2935	0.0163	3	
010.12	Total N/Salicylic (%)	0568	0.3	0.3	0.3	0.40	0.2935	0.0163	3	7
010.12	Total N/Salicylic (%)	0540	0.301	0.31	0.3055	0.74	0.2935	0.0163	3	

							³ Robust Stats				
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag	
	Total N/Combustion (0.3 %)										
010.60	Total N/Combustion (%)	0260	0.2	0.2	0.2	-2.29	0.3355	0.0591	34	7	
010.60	Total N/Combustion (%)	0368	0.254	0.249	0.2515	-1.42	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0542	0.3	0.23	0.265	-1.19	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0234	0.29	0.27	0.28	-0.94	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0027	0.29	0.28	0.285	-0.85	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0292	0.3	0.28	0.29	-0.77	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0451	0.3011	0.2901	0.2956	-0.68	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0307	0.296	0.297	0.2965	-0.66	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0009	0.294	0.3	0.297	-0.65	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0521	0.301	0.301	0.301	-0.58	0.3355	0.0591	34	7	
010.60	Total N/Combustion (%)	0423	0.29	0.32	0.305	-0.52	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0354	0.313	0.305	0.309	-0.45	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0231	0.3	0.32	0.31	-0.43	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0523	0.317	0.304	0.3105	-0.42	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0422	0.31	0.32	0.315	-0.35	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0072	0.313	0.323	0.318	-0.30	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0472	0.32	0.32	0.32	-0.26	0.3355	0.0591	34	7	
010.60	Total N/Combustion (%)	0324	0.338	0.314	0.326	-0.16	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0405	0.33	0.34	0.335	-0.01	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0136	0.35	0.32	0.335	-0.01	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0452	0.343	0.342	0.3425	0.12	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0389	0.354	0.349	0.3515	0.27	0.3355	0.0591	34		
010.60	Total N/Combustion (%)	0255	0.377	0.328	0.3525	0.29	0.3355	0.0591	34		

Total N/Other (0.3 %)	
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Total P2O5/Gravimetric Quinolinium MolybdoP (%)	
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	100
29	100
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100
46	100
47	100
48	100
49	100
50	100
51	100
52	100
53	100
54	100
55	100
56	100
57	100
58	100
59	100
60	100
61	100
62	100
63	100
64	100
65	100
66	100
67	100
68	100
69	100
70	100
71	100
72	100
73	100
74	100
75	100
76	100
77	100
78	100
79	100
80	100
81	100
82	100
83	100
84	100
85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

Total P2O5/Spectrophotometric MolybdovanadoP (%)	
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	100
29	100
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100
46	100
47	100
48	100
49	100
50	100
51	100
52	100
53	100
54	100
55	100
56	100
57	100
58	100
59	100
60	100
61	100
62	100
63	100
64	100
65	100
66	100
67	100
68	100
69	100
70	100
71	100
72	100
73	100
74	100
75	100
76	100
77	100
78	100
79	100
80	100
81	100
82	100
83	100
84	100
85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

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Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats		
							Robust Mean	StDev	n used ⁴ Flag
020.20	Total P2O5/Spectrophotometric MolybdovanadoP (%)	0405	0.38	0.37	0.375	-0.58	0.5083	0.2309	3
020.20	Total P2O5/Spectrophotometric MolybdovanadoP (%)	0481	0.38	0.37	0.375	-0.58	0.5083	0.2309	3
020.20	Total P2O5/Spectrophotometric MolybdovanadoP (%)	0292	0.76	0.79	0.775	1.15	0.5083	0.2309	3
Total P2O5/Alkalimetric Quinolinium MolybdoP (%)									
020.30	Total P2O5/Alkalimetric Quinolinium MolybdoP (%)	0635	0.185	0.183	0.184				
Total P2O5/Automated (%)									
020.40	Total P2O5/Automated (%)	0042	0.2	0.2	0.2				7
Total P2O5/ICP (%)									
020.50	Total P2O5/ICP (%)	0542	0.246	0.28	0.263	-2.53	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0523	0.335	0.332	0.3335	-1.27	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0291	0.36	0.37	0.365	-0.71	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0231	0.38	0.35	0.365	-0.71	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0368	0.3733	0.3624	0.3678	-0.66	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0389	0.389	0.387	0.388	-0.30	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0524	0.3609	0.4152	0.388	-0.30	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0260	0.385	0.403	0.394	-0.20	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0255	0.466	0.354	0.41	0.09	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0422	0.4166	0.4232	0.4199	0.26	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0433	0.44	0.41	0.425	0.35	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0452	0.41	0.457	0.4335	0.50	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0451	0.4829	0.3866	0.4348	0.53	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0543	0.473	0.443	0.458	0.94	0.4052	0.0563	16
020.50	Total P2O5/ICP (%)	0472	0.6	0.57	0.585	3.20	0.4052	0.0563	16

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats			
							Robust Mean	StDev	n used	⁴ Flag
020.50	Total P2O5/ICP (%)	0527	0.6135	0.5977	0.6056	3.56	0.4052	0.0563	16	
Total P2O5/Other (%)										
020.99	Total P2O5/Other (%)	0556	0.21	0.23	0.22					
020.99	Total P2O5/Other (%)	0558	0.73	0.79	0.76					
Citrate Insoluble P2O5/Spectrophotometric MolybdovanadoP (%)										
030.20	Citrate Insoluble P2O5/Spectrophotometric MolybdovanadoP	0405	0.09	0.09	0.09					7
Indirect Available P2O5/Other (0.2 %)										
040.99	Indirect Available P2O5/Other (%)	0562	0.22	0.24	0.23					
040.99	Indirect Available P2O5/Other (%)	0405	0.3	0.28	0.29					
Direct Available P2O5/Gravimetric Quinolinium (0.2 %)										
041.10	Direct Available P2O5/Gravimetric Quinolinium (%)	0009	0.433	0.428	0.4305					
041.10	Direct Available P2O5/Gravimetric Quinolinium (%)	0102	0.48	0.48	0.48					7
Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDTA Ext. (0.2 %)										
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDT	0405	<0.5	<0.5	<0.5		0.3799	0.1256	4	6
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDT	0049	0.23	0.2	0.215	-1.31	0.3799	0.1256	4	
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDT	0072	0.393	0.372	0.3825	0.02	0.3799	0.1256	4	
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDT	0485	0.414	0.39	0.402	0.18	0.3799	0.1256	4	
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDT	0185	0.51	0.35	0.43	0.40	0.3799	0.1256	4	1
041.11	Direct Available P2O5/Gravimetric Quinolinium, Citrate-EDT	0220	0.52	0.52	0.52	1.12	0.3799	0.1256	4	7

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats			
							Robust Mean	StDev	n used	⁴ Flag
	Direct Available P2O5/Spectrophotometric (0.2 %)									
041.20	Direct Available P2O5/Spectrophotometric (%)	0553	0.181	0.181	0.181					7
041.20	Direct Available P2O5/Spectrophotometric (%)	0498	0.51	0.45	0.48					
	Direct Available P2O5/Spectrophotometric, Citrate-EDTA Ext. (0.2 %)									
041.21	Direct Available P2O5/Spectrophotometric, Citrate-EDTA Ext	0568	0.34	0.27	0.305	-0.81	0.3292	0.0298	3	
041.21	Direct Available P2O5/Spectrophotometric, Citrate-EDTA Ext	0472	0.32	0.32	0.32	-0.31	0.3292	0.0298	3	7
041.21	Direct Available P2O5/Spectrophotometric, Citrate-EDTA Ext	0354	0.353	0.372	0.3625	1.12	0.3292	0.0298	3	
	Direct Available P2O5/ICP (0.2 %)									
041.50	Direct Available P2O5/ICP (%)	0521	0.202	0.202	0.202	-0.96	0.3547	0.1594	3	7
041.50	Direct Available P2O5/ICP (%)	0037	0.331	0.3532	0.3421	-0.08	0.3547	0.1594	3	
041.50	Direct Available P2O5/ICP (%)	0605	0.51	0.53	0.52	1.04	0.3547	0.1594	3	
	Direct Available P2O5/ICP, Citrate-EDTA Ext. (0.2 %)									
041.51	Direct Available P2O5/ICP, Citrate-EDTA Ext. (%)	0023	0.303	0.0306	0.1668	-2.45	0.2912	0.0507	4	1
041.51	Direct Available P2O5/ICP, Citrate-EDTA Ext. (%)	0423	0.23	0.21	0.22	-1.40	0.2912	0.0507	4	
041.51	Direct Available P2O5/ICP, Citrate-EDTA Ext. (%)	0136	0.3	0.3	0.3	0.17	0.2912	0.0507	4	7
041.51	Direct Available P2O5/ICP, Citrate-EDTA Ext. (%)	0377	0.31	0.3	0.305	0.27	0.2912	0.0507	4	
041.51	Direct Available P2O5/ICP, Citrate-EDTA Ext. (%)	0231	0.34	0.34	0.34	0.96	0.2912	0.0507	4	7
	Direct Available P2O5/Other (0.2 %)									
041.99	Direct Available P2O5/Other (%)	0540	0.2	0.21	0.205					

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
	Water Soluble P2O5/Spectrophotometric (%)									
048.20	Water Soluble P2O5/Spectrophotometric (%)	0472	0.02	0.02	0.02					7
	Water Soluble P2O5/Other (%)									
048.99	Water Soluble P2O5/Other (%)	0671	0.181	0.183	0.182					
	Soluble K2O/STPB Oxalate (0.05 %)									
050.00	Soluble K2O/STPB Oxalate (%)	0405	<1	<1	<1					6
050.00	Soluble K2O/STPB Oxalate (%)	0049	0.04	0.02	0.03					
	Soluble K2O/AA (Citrate-EDTA) (0.05 %)									
050.32	Soluble K2O/AA (Citrate-EDTA) (%)	0472	0.1	0.09	0.095					
050.32	Soluble K2O/AA (Citrate-EDTA) (%)	0185	0.25	0	0.125					5
	Soluble K2O/ICP (Oxalate) (0.05 %)									
050.50	Soluble K2O/ICP (Oxalate) (%)	0231	0.11	0.12	0.115	-1.15	0.1916	0.0664	3	
050.50	Soluble K2O/ICP (Oxalate) (%)	0422	0.2343	0.2254	0.2298	0.58	0.1916	0.0664	3	
050.50	Soluble K2O/ICP (Oxalate) (%)	0292	0.23	0.23	0.23	0.58	0.1916	0.0664	3	7
050.50	Soluble K2O/ICP (Oxalate) (%)	0324	1.21	0.563	0.8865	10.47	0.1916	0.0664	3	1
	Soluble K2O/ICP (Citrate) (0.05 %)									
050.51	Soluble K2O/ICP (Citrate) (%)	0521	0.05	0.05	0.05	-1.59	0.175	0.0788	5	7
050.51	Soluble K2O/ICP (Citrate) (%)	0568	0.14	0.15	0.145	-0.38	0.175	0.0788	5	
050.51	Soluble K2O/ICP (Citrate) (%)	0452	0.219	0.208	0.2135	0.49	0.175	0.0788	5	
050.51	Soluble K2O/ICP (Citrate) (%)	0368	0.2329	0.2303	0.2316	0.72	0.175	0.0788	5	

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats			
							Robust Mean	StDev	n used	⁴ Flag
050.51	Soluble K2O/ICP (Citrate) (%)	0291	0.23	0.24	0.235	0.76	0.175	0.0788	5	
Soluble K2O/ICP (Citrate-EDTA) (0.05 %)										
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0136	<0.08	<0.08	<0.08		0.1846	0.1757	4	6
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0377	<0.11	<0.11	<0.11		0.1846	0.1757	4	6
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0423	0.052	0.049	0.0505	-0.76	0.1846	0.1757	4	
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0023	0.103	0.111	0.107	-0.44	0.1846	0.1757	4	
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0354	0.137	0.14	0.1385	-0.26	0.1846	0.1757	4	
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0485	0.321	0.495	0.408	1.27	0.1846	0.1757	4	1
050.52	Soluble K2O/ICP (Citrate-EDTA) (%)	0543	0.44	0.445	0.4425	1.47	0.1846	0.1757	4	
Soluble K2O/Flame Photometric (Citrate-EDTA) (0.05 %)										
050.62	Soluble K2O/Flame Photometric (Citrate-EDTA) (%)	0037	0.1194	0.1311	0.1252					
Soluble K2O/Other (0.05 %)										
050.99	Soluble K2O/Other (%)	0042	0	0	0		0.2013	0.1307	18	5
050.99	Soluble K2O/Other (%)	0635	0.034	0.032	0.033	-1.29	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0556	0.048	0.05	0.049	-1.17	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0540	0.05	0.051	0.0505	-1.15	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0562	0.07	0.06	0.065	-1.04	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0220	0.08	0.08	0.08	-0.93	0.2013	0.1307	18	7
050.99	Soluble K2O/Other (%)	0671	0.115	0.119	0.117	-0.64	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0542	0.127	0.134	0.1305	-0.54	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0481	0.2	0.2	0.2	-0.01	0.2013	0.1307	18	7
050.99	Soluble K2O/Other (%)	0433	0.22	0.23	0.225	0.18	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0451	0.2334	0.2168	0.2251	0.18	0.2013	0.1307	18	

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats			⁴ Flag
							Robust Mean	StDev	n used	
050.99	Soluble K2O/Other (%)	0605	0.24	0.25	0.245	0.33	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0389	0.251	0.255	0.253	0.40	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0558	0.27	0.31	0.29	0.68	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0524	0.2837	0.3037	0.2937	0.71	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0523	0.275	0.318	0.2965	0.73	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0260	0.31	0.345	0.3275	0.97	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0255	0.379	0.307	0.343	1.08	0.2013	0.1307	18	1
050.99	Soluble K2O/Other (%)	0498	0.34	0.35	0.345	1.10	0.2013	0.1307	18	
050.99	Soluble K2O/Other (%)	0527	0.5758	0.5657	0.5708	2.83	0.2013	0.1307	18	

Water (Free)/AFPC No. 2B (105°C oven for 2 hours, 5g sample) (%)

060.30	Water (Free)/AFPC No. 2B (105°C oven for 2 hours, 5g sample)	0452	37.16	38.55	37.86
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Water (Free)/Other (%)

060.99	Water (Free)/Other (%)	0136	37.3	35.7	36.5
060.99	Water (Free)/Other (%)	0009	39.3	42.7	41

Acid Soluble Ca/AA, inorganic 965.09 (%)

101.00	Acid Soluble Ca/AA, inorganic 965.09 (%)	0498	7.2	6.8	7
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Acid Soluble Ca/ICP, test portion inorganic 965.09 (%)

101.30	Acid Soluble Ca/ICP, test portion inorganic 965.09 (%)	0354	3.98	4.04	4.01
101.30	Acid Soluble Ca/ICP, test portion inorganic 965.09 (%)	0568	5.34	4.39	4.865

Acid Soluble Ca/ICP, 2017.02 (%)

101.33	Acid Soluble Ca/ICP, 2017.02 (%)	0009	4.44	4.08	4.26	-0.95	5.512	1.312	3
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Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats			
							Robust Mean	StDev	n used	⁴ Flag
101.33	Acid Soluble Ca/ICP, 2017.02 (%)	0472	5.39	5.41	5.4	-0.09	5.512	1.312	3	
101.33	Acid Soluble Ca/ICP, 2017.02 (%)	0527	6.9038	6.8489	6.876	1.04	5.512	1.312	3	
Acid Soluble Mg/AA, inorganic 965.09 (%)										
121.00	Acid Soluble Mg/AA, inorganic 965.09 (%)	0498	0.25	0.28	0.265					
Acid Soluble Mg/ICP, test portion inorganic 965.09 (%)										
121.30	Acid Soluble Mg/ICP, test portion inorganic 965.09 (%)	0568	0.24	0.24	0.24					7
121.30	Acid Soluble Mg/ICP, test portion inorganic 965.09 (%)	0354	0.29	0.26	0.275					
Acid Soluble Mg/ICP, 2017.02 (%)										
121.33	Acid Soluble Mg/ICP, 2017.02 (%)	0009	0.213	0.259	0.236	-0.67	0.3045	0.1026	3	
121.33	Acid Soluble Mg/ICP, 2017.02 (%)	0472	0.25	0.26	0.255	-0.48	0.3045	0.1026	3	
121.33	Acid Soluble Mg/ICP, 2017.02 (%)	0527	0.427	0.4178	0.4224	1.15	0.3045	0.1026	3	
Acid Soluble Mg/Other (%)										
121.99	Acid Soluble Mg/Other (%)	0524	0.2353	0.2794	0.2574					
Total S/ICP, test portion as in 2017.02 (%)										
148.07	Total S/ICP, test portion as in 2017.02 (%)	0472	0.21	0.21	0.21					7
Total S/Other (%)										
148.99	Total S/Other (%)	0354	0.07	0.07	0.07	-1.15	0.1634	0.0815	3	7
148.99	Total S/Other (%)	0558	0.17	0.23	0.2	0.45	0.1634	0.0815	3	
148.99	Total S/Other (%)	0422	0.228	0.2126	0.2203	0.70	0.1634	0.0815	3	

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
S - HNO3 soluble/ICP (%)										
149.04	S - HNO3 soluble/ICP (%)	0524	0.1687	0.17	0.1694					
Acid Soluble As/AA, test portion 2006.03 modified w/dual acid (ppm)										
151.00	Acid Soluble As/AA, test portion 2006.03 modified w/dual aci	0498	1.9	1.89	1.895					
Acid Soluble As/ICP (ppm)										
151.30	Acid Soluble As/ICP (ppm)	0605	<6.25	<6.25	<6.25					6
151.30	Acid Soluble As/ICP (ppm)	0524	3.2462	3.4657	3.356					
Acid Soluble As/ICP, 2006.03 (ppm)										
151.32	Acid Soluble As/ICP, 2006.03 (ppm)	0220	2.6	2.6	2.6					7
Acid Soluble As/ICP, 2017.02 (ppm)										
151.33	Acid Soluble As/ICP, 2017.02 (ppm)	0009	<5	<5	<5					6
151.33	Acid Soluble As/ICP, 2017.02 (ppm)	0527	6.2714	5.9489	6.11					
Acid Soluble As/Other (ppm)										
151.99	Acid Soluble As/Other (ppm)	0220	2.2	2.3	2.25					
151.99	Acid Soluble As/Other (ppm)	0009	3.03	3.25	3.14					
Acid Soluble B/ICP, test portion in 982.01 (%)										
165.30	Acid Soluble B/ICP, test portion in 982.01 (%)	0354	<0.01	<0.01	<0.01					6
Acid Soluble B/Other (%)										
165.99	Acid Soluble B/Other (%)	0009	<0.0025	<0.0025	<0.0025					6

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats		
							Robust Mean	StDev	n used ⁴ Flag
165.99	Acid Soluble B/Other (%)	0527	0.0011	0.0012	0.0012				
165.99	Acid Soluble B/Other (%)	0524	0.0021	0.0022	0.0022				
Acid Soluble Cd/AA, test portion 2006.03 modified w/dual acid (ppm)									
181.00	Acid Soluble Cd/AA, test portion 2006.03 modified w/dual aci	0498	0.16	0.17	0.165				
Acid Soluble Cd/ICP (ppm)									
181.30	Acid Soluble Cd/ICP (ppm)	0524	0.6551	0.7703	0.7127				
181.30	Acid Soluble Cd/ICP (ppm)	0605	1.71	1.74	1.725				
Acid Soluble Cd/ICP, 2006.03 (ppm)									
181.32	Acid Soluble Cd/ICP, 2006.03 (ppm)	0220	0.84	0.96	0.9				
Acid Soluble Cd/ICP, 2017.02 (ppm)									
181.33	Acid Soluble Cd/ICP, 2017.02 (ppm)	0009	<2	<2	<2				6
181.33	Acid Soluble Cd/ICP, 2017.02 (ppm)	0527	1.3518	1.3775	1.365				
Acid Soluble Cd/Other (ppm)									
181.99	Acid Soluble Cd/Other (ppm)	0220	0.78	0.8	0.79				
181.99	Acid Soluble Cd/Other (ppm)	0009	0.815	0.821	0.818				
Acid Soluble Cr/ICP (ppm)									
191.30	Acid Soluble Cr/ICP (ppm)	0605	61.69	61.97	61.83				
191.30	Acid Soluble Cr/ICP (ppm)	0524	82.8831	94.3273	88.61				

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
	Acid Soluble Cr/ICP, 2006.03 (ppm)									
191.32	Acid Soluble Cr/ICP, 2006.03 (ppm)	0220	10	10.7	10.35					
	Acid Soluble Cr/ICP, 2017.02 (ppm)									
191.33	Acid Soluble Cr/ICP, 2017.02 (ppm)	0009	<22	<22	<22					6
191.33	Acid Soluble Cr/ICP, 2017.02 (ppm)	0527	21.3528	20.9814	21.17					
	Acid Soluble Cr/Other (ppm)									
191.99	Acid Soluble Cr/Other (ppm)	0220	8.1	9.2	8.65					
191.99	Acid Soluble Cr/Other (ppm)	0009	13.4	19.4	16.4					
	Acid Soluble Co/ICP (ppm)									
202.30	Acid Soluble Co/ICP (ppm)	0524	4.1108	4.3553	4.233					
202.30	Acid Soluble Co/ICP (ppm)	0605	5.37	5.4	5.385					
	Acid Soluble Co/ICP, 2006.03 (ppm)									
202.32	Acid Soluble Co/ICP, 2006.03 (ppm)	0220	3.14	3.15	3.145					
	Acid Soluble Co/ICP, 2017.02 (ppm)									
202.33	Acid Soluble Co/ICP, 2017.02 (ppm)	0009	2.82	3.21	3.015	-0.76	4.003	1.302	3	
202.33	Acid Soluble Co/ICP, 2017.02 (ppm)	0037	3.4814	3.5512	3.516	-0.37	4.003	1.302	3	
202.33	Acid Soluble Co/ICP, 2017.02 (ppm)	0527	5.5369	5.4187	5.478	1.13	4.003	1.302	3	
	Acid Soluble Co/Other (ppm)									
202.99	Acid Soluble Co/Other (ppm)	0220	3.03	2.95	2.99					

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats		
							Robust Mean	StDev	n used ⁴ Flag
202.99	Acid Soluble Co/Other (ppm)	0009	3.16	3.82	3.49				
Acid Soluble Cu/AA, inorganic 965.09 (%)									
221.00	Acid Soluble Cu/AA, inorganic 965.09 (%)	0498	0.0021	0.0024	0.0022				
Acid Soluble Cu/ICP, test portion inorganic 965.09 (%)									
221.30	Acid Soluble Cu/ICP, test portion inorganic 965.09 (%)	0354	<0.01	<0.01	<0.01				6
Acid Soluble Cu/ICP, test portion 2006.03A-C (%)									
221.32	Acid Soluble Cu/ICP, test portion 2006.03A-C (%)	0220	0.0023	0.0021	0.0022				
Acid Soluble Cu/ICP, 2017.02 (%)									
221.33	Acid Soluble Cu/ICP, 2017.02 (%)	0009	<0.0025	<0.0025	<0.0025				6
221.33	Acid Soluble Cu/ICP, 2017.02 (%)	0527	0.0027	0.0027	0.0027				7
Acid Soluble Cu/Other (%)									
221.99	Acid Soluble Cu/Other (%)	0524	0.0015	0.0017	0.0016				
221.99	Acid Soluble Cu/Other (%)	0009	0.0015	0.0018	0.0016				
Acid Soluble Fe/AA, inorganic 965.09 (%)									
241.00	Acid Soluble Fe/AA, inorganic 965.09 (%)	0498	0.64	0.78	0.71				
Acid Soluble Fe/ICP, test portion inorganic 965.09 (%)									
241.30	Acid Soluble Fe/ICP, test portion inorganic 965.09 (%)	0354	0.79	0.81	0.8				
Acid Soluble Fe/ICP, 2017.02 (%)									
241.33	Acid Soluble Fe/ICP, 2017.02 (%)	0009	0.614	0.708	0.661	-0.60	0.8531	0.3207	3

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats		
							Robust Mean	StDev	n used ⁴ Flag
241.33	Acid Soluble Fe/ICP, 2017.02 (%)	0472	0.67	0.68	0.675	-0.56	0.8531	0.3207	3
241.33	Acid Soluble Fe/ICP, 2017.02 (%)	0527	1.2355	1.211	1.223	1.15	0.8531	0.3207	3
Acid Soluble Fe/Other (%)									
241.99	Acid Soluble Fe/Other (%)	0524	0.7814	0.8213	0.8014				
241.99	Acid Soluble Fe/Other (%)	0558	0.9	1.02	0.96				
Acid Soluble Pb/AA, test portion 2006.03 modified w/dual acid (ppm)									
251.00	Acid Soluble Pb/AA, test portion 2006.03 modified w/dual aci	0498	<0.5	<0.5	<0.5				6
Acid Soluble Pb/ICP (ppm)									
251.30	Acid Soluble Pb/ICP (ppm)	0524	9.2422	9.9718	9.607				
251.30	Acid Soluble Pb/ICP (ppm)	0605	11.71	11.08	11.4				
Acid Soluble Pb/ICP, 2006.03 (ppm)									
251.32	Acid Soluble Pb/ICP, 2006.03 (ppm)	0220	4.91	4.95	4.93				
Acid Soluble Pb/ICP, 2017.02 (ppm)									
251.33	Acid Soluble Pb/ICP, 2017.02 (ppm)	0009	6.32	<6	<6				6
251.33	Acid Soluble Pb/ICP, 2017.02 (ppm)	0527	18.6442	18.4864	18.57				
Acid Soluble Pb/Other (ppm)									
251.99	Acid Soluble Pb/Other (ppm)	0220	4.44	4.58	4.51				
251.99	Acid Soluble Pb/Other (ppm)	0009	7.21	7.15	7.18				

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
	Acid Soluble Mn/ICP, test portion 972.02a (%)									
261.30	Acid Soluble Mn/ICP, test portion 972.02a (%)	0354	0.09	0.1	0.095					
	Acid Soluble Mn/ICP, 2017.02 (%)									
261.35	Acid Soluble Mn/ICP, 2017.02 (%)	0009	0.101	0.109	0.105	-0.80	0.1299	0.031	3	
261.35	Acid Soluble Mn/ICP, 2017.02 (%)	0472	0.12	0.12	0.12	-0.32	0.1299	0.031	3	7
261.35	Acid Soluble Mn/ICP, 2017.02 (%)	0527	0.1664	0.1628	0.1646	1.12	0.1299	0.031	3	
	Acid Soluble Mn/Other (%)									
261.99	Acid Soluble Mn/Other (%)	0524	0.0919	0.113	0.1024					
261.99	Acid Soluble Mn/Other (%)	0558	0.11	0.12	0.115					
	Acid Soluble Hg/AA (ppm)									
281.00	Acid Soluble Hg/AA (ppm)	0498	<0.5	<0.5	<0.5					6
	Acid Soluble Hg/ICP (ppm)									
281.30	Acid Soluble Hg/ICP (ppm)	0527	<0.001	<0.001	<0.001					6
281.30	Acid Soluble Hg/ICP (ppm)	0605	<1.25	<1.25	<1.25					6
	Acid Soluble Hg/Other (ppm)									
281.99	Acid Soluble Hg/Other (ppm)	0220	<0.01	<0.01	<0.01					6
281.99	Acid Soluble Hg/Other (ppm)	0009	<0.044	<0.044	<0.044					6
281.99	Acid Soluble Hg/Other (ppm)	0524	0.0162	0.0175	0.0168					

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
	Acid Soluble Mo/ICP (ppm)									
289.30	Acid Soluble Mo/ICP (ppm)	0524	3.6863	3.9289	3.808					
	Acid Soluble Mo/ICP, 2006.03 (ppm)									
289.32	Acid Soluble Mo/ICP, 2006.03 (ppm)	0220	0.66	0.64	0.65					
	Acid Soluble Mo/ICP, 2017.02 (ppm)									
289.33	Acid Soluble Mo/ICP, 2017.02 (ppm)	0009	<4	<4	<4					6
289.33	Acid Soluble Mo/ICP, 2017.02 (ppm)	0037	0.9542	1.038	0.9961					
289.33	Acid Soluble Mo/ICP, 2017.02 (ppm)	0527	1.248	1.2755	1.262					
	Acid Soluble Mo/Other (ppm)									
289.99	Acid Soluble Mo/Other (ppm)	0220	0.57	0.59	0.58					
289.99	Acid Soluble Mo/Other (ppm)	0009	0.806	0.908	0.857					
	Acid Soluble Ni/ICP (ppm)									
291.30	Acid Soluble Ni/ICP (ppm)	0605	13.21	13.47	13.34					
291.30	Acid Soluble Ni/ICP (ppm)	0524	336.962	358.835	347.9					
	Acid Soluble Ni/ICP, 2006.03 (ppm)									
291.32	Acid Soluble Ni/ICP, 2006.03 (ppm)	0220	7.9	8.7	8.3					
	Acid Soluble Ni/ICP, 2017.02 (ppm)									
291.33	Acid Soluble Ni/ICP, 2017.02 (ppm)	0009	7.41	8.62	8.015	-0.82	11.16	3.837	3	
291.33	Acid Soluble Ni/ICP, 2017.02 (ppm)	0037	9.7684	10.2865	10.03	-0.29	11.16	3.837	3	

Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	³ Robust Stats		
							Robust Mean	StDev	n used ⁴ Flag
291.33	Acid Soluble Ni/ICP, 2017.02 (ppm)	0527	15.4594	15.4087	15.43	1.11	11.16	3.837	3
Acid Soluble Ni/Other (ppm)									
291.99	Acid Soluble Ni/Other (ppm)	0220	7.7	8.3	8				
291.99	Acid Soluble Ni/Other (ppm)	0009	8.23	9.76	8.995				
Acid Soluble Se/ICP (ppm)									
301.30	Acid Soluble Se/ICP (ppm)	0605	<6.25	<6.25	<6.25				6
301.30	Acid Soluble Se/ICP (ppm)	0524	0.1992	0.2059	0.2026				
Acid Soluble Se/ICP, 2006.03 (ppm)									
301.32	Acid Soluble Se/ICP, 2006.03 (ppm)	0220	0.65	0.62	0.635				
Acid Soluble Se/ICP, 2017.02 (ppm)									
301.33	Acid Soluble Se/ICP, 2017.02 (ppm)	0527	<0.01	<0.01	<0.01				6
301.33	Acid Soluble Se/ICP, 2017.02 (ppm)	0009	<22	<22	<22				6
Acid Soluble Se/Other (ppm)									
301.99	Acid Soluble Se/Other (ppm)	0220	0.21	0.3	0.255				
301.99	Acid Soluble Se/Other (ppm)	0009	0.99	1.06	1.025				
Sodium/ICP, test portion as in 2017.02 (%)									
311.33	Sodium/ICP, test portion as in 2017.02 (%)	0009	0.104	0.0914	0.0977				
311.33	Sodium/ICP, test portion as in 2017.02 (%)	0527	0.125	0.1241	0.1246				

							³ Robust Stats			
Code	Analyte and Method	Lab Code	Result1	Result2	¹ Lab Value	² Z score	Robust Mean	StDev	n used	⁴ Flag
	Sodium/Other (%)									
311.99	Sodium/Other (%)	0354	0.11	0.12	0.115					
	Acid Soluble Zn/AA, inorganic 965.09 (%)									
321.00	Acid Soluble Zn/AA, inorganic 965.09 (%)	0498	0.013	0.012	0.0125					
	Acid Soluble Zn/ICP, test portion inorganic 965.09 (%)									
321.30	Acid Soluble Zn/ICP, test portion inorganic 965.09 (%)	0354	0.01	0.01	0.01					7
	Acid Soluble Zn/ICP, test portion 2006.03A-C (%)									
321.32	Acid Soluble Zn/ICP, test portion 2006.03A-C (%)	0220	0.0116	0.0126	0.0121					
	Acid Soluble Zn/ICP, 2017.02 (%)									
321.33	Acid Soluble Zn/ICP, 2017.02 (%)	0472	0.01	0.01	0.01	-0.64	0.0126	0.004	3	7
321.33	Acid Soluble Zn/ICP, 2017.02 (%)	0009	0.0106	0.0104	0.0105	-0.51	0.0126	0.004	3	
321.33	Acid Soluble Zn/ICP, 2017.02 (%)	0527	0.0172	0.0171	0.0172	1.15	0.0126	0.004	3	
	Acid Soluble Zn/Other (%)									
321.99	Acid Soluble Zn/Other (%)	0524	0.0105	0.0124	0.0114					

1. Lab Data: Lab Value is the average of 2 reported lab results. † or ‡ beside Lab Value denotes the value exceeds the investigational allowance (IA) around the method mean. † denotes value is less than IA and ‡ denotes value is greater than IA. This is noted for guaranteed analytes with # of observations ≥ 6 . Method code and analyte name are shown in green for guaranteed analytes along with guaranteed concentration.

2. Z score: Red = Z value >3 or <-3 (action required), Orange = Z value between 2 and 3 or -2 and -3 (warning), Green = Z value between -2 and 2 (pass). Z values are shown for data sets with number of observation used (n used) ≥ 3 for Lab Values that are not an analytical limit or 0. Color ratings shown for number of observations used (n used) ≥ 6 . Z values were calculated as $(\text{Lab Value} - \text{Mean Value})/(\text{Standard Deviation})$. Unspecified methods identified as "Other" are shown in grey without color ratings on Z-score.

3. Statistical parameters: Robust statistics was employed to determine mean and standard deviation (StDev) if number of observations used (n used) ≥ 6 (blue background). Classical statistics was employed if number of observations used (n used) = 3, 4, or 5 (pink background). Flags identify data not used to calculate statistical parameters.

4. Flag: Flag number identifies why data was not used to determine statistical parameters. 1 = data rejected for dups too far apart, 2 = rejected as extreme outlier, 3 = rejected for both dups too far apart and extreme outlier, 4 = removed after manual inspection, 5 = rejected due to zero(s) submitted, 6 = rejected due to analytical limit submitted (eg "<0.1"), 7 = Lab's range rejected for determining mean range on Report Cards due to identical values reported for two results.

Appendix

Content Description of Method All Labs Report

The Method All Labs report has results listed for every lab grouped by Method with data in each group sorted by lab value. The reports are helpful to see where your lab result fell within the whole set of data for the Method by identifying your results by your lab code. Data on the right side of the report shows the mean, standard deviation, and number of observations (obs) used in the analysis of each group. An observation was a lab value for a test which was the average of reported duplicate results. Mean and standard deviation were determined using Algorithm A robust analysis in ISO 13528:2015(E) (Statistical methods for use in proficiency testing by interlaboratory comparison) for 6 or more observations. Robust statistics has an advantage of removing undesired influence of outlying data on the mean and standard deviation without removing data from the statistical analysis. Robust statistics was only used on data sets with 6 or more observations. For data sets with 3, 4, or 5 observations, classical calculation of mean and standard deviation was performed. Z scores for data sets with a small number of observations are given less importance as indicated by no color coding of Z score with less than 6 observations. No Z scores were determined for 1 or 2 observations.

Before determining mean and standard deviation for a set of data, data was removed from statistical analysis for various reasons. Mandel statistical analysis was used to identify and remove extreme outliers and lab values from duplicate results that were too far apart (ISO 5725-2:1994, Accuracy (trueness and precision) of measurement methods and results – Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method.). Any individual result report of zero or less than a limit resulted in lab value removed from analysis. The lab values removed from analysis are denoted with numerical flags on the far right-hand side of the report. Z scores are reported for data removed due to extreme outlier or duplicates too far apart even though data was not used in the determination of mean and standard deviation. However, Z scores are not reported for results reported as 0 or less than a limit. Also, any submission of just one lab result is removed for consideration in statistical analysis and presentation on reports.

The American Association of Plant Food Control Officials (AAPFCO) recommends limits around a nutrient guarantee that should initiate an investigation if observed nutrient concentration falls outside of the limits. These limits are referred to as Investigational Allowances (IAs). Lab Values that fall outside of the IA limits around the method mean are denoted with † (below limit) or ‡ (above limit). These same symbols are also used to denote Lab Values beyond IA limits on Laboratory Report Cards.