

Analyte PT For All Labs

### Magruder Fertilizer Proficiency Testing Program

# Analytes: 21

Sample # 220851

Potassium Select PT Scheme

# Labs Reporting: 17

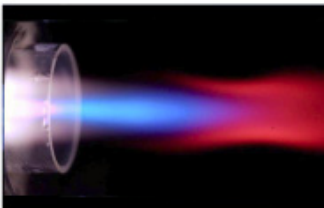
Grade 0-0-50

### Statistical Summary

Issue Date : 09/30/2022

Analyte Code	Analyte Sample # 220851	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Analyte IA Ratio	Average Range (R-bar)	Horwitz %RSD
010	Total N (%)	1		0.0095									
020	Total P2O5 (%)	1		0.1100									
050	Soluble K2O (50%)	17	17	52.30	2.823	52.02	1.6802	1.354	0.4106	2.60%	1.88	0.6206	1.39%
101	Acid Soluble Ca (%)	2	2	0.1079	0.0242								
121	Acid Soluble Mg (%)	2	2	0.1852	0.0498								
145	Sulfate S, HCl soluble (%)	3	3	18.07	0.1711	18.07		0.1711	0.1235	0.95%		0.0867	2.35%
148	Total S (17%)	12	11	17.90	0.8492	17.72	1.0000	0.7157	0.2697	4.04%	1.67	0.1228	2.38%
151	Acid Soluble As (ppm)	3	2	1.250	1.521	0.3750		0.1768	0.1563	47.14%		0.1500	18.54%
181	Acid Soluble Cd (ppm)	2	0	0.5500	0.6364								
190	Water Soluble Cl (0.8%)	4	4	0.0911	0.0672	0.0911	0.0141	0.0672	0.0420	73.81%	11.10	0.0007	5.74%
191	Acid Soluble Cr (ppm)	5	5	9.747	1.850	9.747		1.850	1.034	18.98%		0.5460	11.36%
202	Acid Soluble Co (ppm)	5	5	5.871	3.004	5.871	2.7613	3.004	1.679	51.17%	2.54	0.5260	12.26%
221	Acid Soluble Cu (%)	1		0.0012									
241	Acid Soluble Fe (%)	2	2	0.0215	0.0021								
251	Acid Soluble Pb (ppm)	2	0	2.500	2.121								
261	Acid Soluble Mn (%)	1		0.0064									
281	Acid Soluble Hg (ppm)	2	0	1.005	1.407								
289	Acid Soluble Mo (ppm)	3	2	0.6667	0.3055	0.5000	1.1500	0.1414	0.1250	28.28%	0.29	0.2000	17.76%
291	Acid Soluble Ni (ppm)	4	4	4.308	0.4728	4.308		0.4728	0.2955	10.98%		0.2900	12.84%
301	Acid Soluble Se (ppm)	3	2	3.483	5.644	0.2250		0.1061	0.0938	47.14%		0.0500	20.02%
321	Acid Soluble Zn (%)	5	5	0.0184	0.0020	0.0184	0.0068	0.0020	0.0011	10.84%	0.68	0.0002	7.30%

The Analyte IA Ratio = 2.33 \* Robust SD / IA at the Analyte Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.



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Sample # 220851

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# Labs Reporting: 17

Grade 0-0-50

Lab Values

Issue Date : 09/30/2022

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Range				
010	Total N (%)	0472	0.0095	0.0010				1		010.60	0
020	Total P2O5 (%)	0472	0.1100	0.0200				1		020.50	0
050	Soluble K2O (50%)	0576	47.93†	0.1200	52.02	1.354	0.6206	17	-3.02	050.99	0
050	Soluble K2O (50%)	0472	48.08†	1.250	52.02	1.354	0.6206	17	-2.91	050.32	0
050	Soluble K2O (50%)	0603	50.45	0.1000	52.02	1.354	0.6206	17	-1.16	050.50	0
050	Soluble K2O (50%)	0025	50.95	0.3000	52.02	1.354	0.6206	17	-0.79	050.52	0
050	Soluble K2O (50%)	0494	51.41	2.710	52.02	1.354	0.6206	17	-0.45	050.52	0
050	Soluble K2O (50%)	0589	51.82	0.0400	52.02	1.354	0.6206	17	-0.14	050.00	0
050	Soluble K2O (50%)	0220	51.92	0.0700	52.02	1.354	0.6206	17	-0.07	050.00	0
050	Soluble K2O (50%)	0027	52.06	0.0300	52.02	1.354	0.6206	17	0.03	050.99	0
050	Soluble K2O (50%)	0040	52.10	0.4000	52.02	1.354	0.6206	17	0.06	050.30	0
050	Soluble K2O (50%)	0590	52.16	0.0400	52.02	1.354	0.6206	17	0.11	050.99	0
050	Soluble K2O (50%)	0421	52.45	1.100	52.02	1.354	0.6206	17	0.32	050.99	0
050	Soluble K2O (50%)	0073	52.46	0.1100	52.02	1.354	0.6206	17	0.32	050.30	0
050	Soluble K2O (50%)	0547	52.65	0.3200	52.02	1.354	0.6206	17	0.47	050.52	0
050	Soluble K2O (50%)	0494	52.71	1.130	52.02	1.354	0.6206	17	0.51	050.00	0
050	Soluble K2O (50%)	0561	53.08	0.1400	52.02	1.354	0.6206	17	0.79	050.99	0
050	Soluble K2O (50%)	0597	56.67‡	0.2900	52.02	1.354	0.6206	17	3.43	050.00	0
050	Soluble K2O (50%)	0042	60.30‡	2.400	52.02	1.354	0.6206	17	6.12	050.99	0
101	Acid Soluble Ca (%)	0494	0.0909	0.0003				2		101.33	0
101	Acid Soluble Ca (%)	0472	0.1250	0.0100				2		101.33	0
121	Acid Soluble Mg (%)	0472	0.1500	0.0000				2		121.33	0
121	Acid Soluble Mg (%)	0494	0.2205	0.0025				2		121.33	0
145	Sulfate S, HCl soluble (%)	0561	17.95	0.1100	18.07	0.1711	0.0867	3	-0.73	145.00	0
145	Sulfate S, HCl soluble (%)	0027	18.00	0.1200	18.07	0.1711	0.0867	3	-0.41	145.00	0
145	Sulfate S, HCl soluble (%)	0405	18.27	0.0300	18.07	0.1711	0.0867	3	1.14	145.00	0
148	Total S (17%)	0073	16.77	0.0700	17.72	0.7157	0.1228	11	-1.33	148.00	0
148	Total S (17%)	0603	17.09	0.0500	17.72	0.7157	0.1228	11	-0.89	148.07	0
148	Total S (17%)	0576	17.10	0.0000	17.72	0.7157	0.1228	11	-0.86	148.99	0
148	Total S (17%)	0589	17.13	0.1000	17.72	0.7157	0.1228	11	-0.82	148.01	0
148	Total S (17%)	0472	17.66	0.2300	17.72	0.7157	0.1228	11	-0.09	148.07	0
148	Total S (17%)	0597	17.78	0.3800	17.72	0.7157	0.1228	11	0.09	148.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Range				
148	Total S (17%)	0590	18.01	0.0300	17.72	0.7157	0.1228	11	0.40	148.99	0
148	Total S (17%)	0040	18.15	0.1000	17.72	0.7157	0.1228	11	0.60	148.07	0
148	Total S (17%)	0494	18.16	0.0890	17.72	0.7157	0.1228	11	0.62	148.01	0
148	Total S (17%)	0494	18.28	0.2018	17.72	0.7157	0.1228	11	0.79	148.07	0
148	Total S (17%)	0220	19.05±	0.1000	17.72	0.7157	0.1228	11	1.86	148.99	0
148	Total S (17%)	0421	19.65±	1.700	17.72	0.7157	0.1228	11	2.70	148.07	1
151	Acid Soluble As (ppm)	0220	0.2500	0.1000				2		151.99	0
151	Acid Soluble As (ppm)	0220	0.5000	0.2000				2		151.32	0
151	Acid Soluble As (ppm)	0405	< 3					2		151.99	5
181	Acid Soluble Cd (ppm)	0220	< 0.1					0		181.99	5
181	Acid Soluble Cd (ppm)	0405	< 1					0		181.99	5
190	Water Soluble Cl (0.8%)	0220	0.04000±	0.0000	0.0911	0.0672	0.0007	4	-0.76	190.00	0
190	Water Soluble Cl (0.8%)	0494	0.06430±	0.0026	0.0911	0.0672	0.0007	4	-0.40	190.00	0
190	Water Soluble Cl (0.8%)	0589	0.07000±	0.0000	0.0911	0.0672	0.0007	4	-0.31	190.99	0
190	Water Soluble Cl (0.8%)	0561	0.1900±	0.0000	0.0911	0.0672	0.0007	4	1.47	190.00	0
191	Acid Soluble Cr (ppm)	0220	7.600	0.2000	9.747	1.850	0.5460	5	-1.16	191.32	0
191	Acid Soluble Cr (ppm)	0220	8.200	2.200	9.747	1.850	0.5460	5	-0.84	191.99	0
191	Acid Soluble Cr (ppm)	0494	9.935	0.3300	9.747	1.850	0.5460	5	0.10	191.33	0
191	Acid Soluble Cr (ppm)	0405	11.00	0.0000	9.747	1.850	0.5460	5	0.68	191.99	0
191	Acid Soluble Cr (ppm)	0027	12.00	0.0000	9.747	1.850	0.5460	5	1.22	191.30	0
202	Acid Soluble Co (ppm)	0220	3.150	0.1000	5.871	3.004	0.5260	5	-0.91	202.32	0
202	Acid Soluble Co (ppm)	0220	3.250	0.3000	5.871	3.004	0.5260	5	-0.87	202.99	0
202	Acid Soluble Co (ppm)	0494	5.955	0.2300	5.871	3.004	0.5260	5	0.03	202.33	0
202	Acid Soluble Co (ppm)	0405	6.500	1.000	5.871	3.004	0.5260	5	0.21	202.99	0
202	Acid Soluble Co (ppm)	0027	10.50	1.000	5.871	3.004	0.5260	5	1.54	202.30	0
221	Acid Soluble Cu (%)	0405	0.0012	0.0000				1		221.99	0
241	Acid Soluble Fe (%)	0472	0.0200	0.0000				2		241.33	0
241	Acid Soluble Fe (%)	0494	0.0230	0.0005				2		241.33	0
251	Acid Soluble Pb (ppm)	0220	< 1					0		251.99	5
251	Acid Soluble Pb (ppm)	0405	< 4					0		251.99	5
261	Acid Soluble Mn (%)	0494	0.0064	0.0003				1		261.35	0
281	Acid Soluble Hg (ppm)	0220	< 0.01					0		281.99	5
281	Acid Soluble Hg (ppm)	0405	< 2					0		281.99	5
289	Acid Soluble Mo (ppm)	0220	0.4000	0.2000				2		289.99	0
289	Acid Soluble Mo (ppm)	0220	0.6000	0.2000				2		289.32	0
289	Acid Soluble Mo (ppm)	0405	< 1					2		289.99	5
291	Acid Soluble Ni (ppm)	0220	3.950	0.1000	4.308	0.4728	0.2900	4	-0.76	291.32	0
291	Acid Soluble Ni (ppm)	0494	4.080	0.2600	4.308	0.4728	0.2900	4	-0.48	291.33	0
291	Acid Soluble Ni (ppm)	0220	4.200	0.8000	4.308	0.4728	0.2900	4	-0.23	291.99	0
291	Acid Soluble Ni (ppm)	0405	5.000	0.0000	4.308	0.4728	0.2900	4	1.46	291.99	0
301	Acid Soluble Se (ppm)	0220	0.1500	0.1000				2		301.99	0
301	Acid Soluble Se (ppm)	0220	0.3000	0.0000				2		301.32	0
301	Acid Soluble Se (ppm)	0405	< 10					2		301.99	5

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Range				
321	Acid Soluble Zn (%)	0494	0.0150	0.0005	0.0184	0.0020	0.0002	5	-1.74	321.33	0
321	Acid Soluble Zn (%)	0220	0.0188	0.0003	0.0184	0.0020	0.0002	5	0.17	321.99	0
321	Acid Soluble Zn (%)	0405	0.0190	0.0000	0.0184	0.0020	0.0002	5	0.29	321.99	0
321	Acid Soluble Zn (%)	0220	0.0194	0.0000	0.0184	0.0020	0.0002	5	0.49	321.32	0
321	Acid Soluble Zn (%)	0472	0.0200	0.0000	0.0184	0.0020	0.0002	5	0.79	321.33	0

**Interpreting Z Scores and Flags:**

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

**Notes:**

Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. Your offset values are higher (‡) or lower (†) than the Robust Analyte value ± Investigational Allowance. Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.