

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 160511

Urea

Statistical Summary

Analytes: 26

Labs Reporting: 82

Issue Date : 06/30/2016

Analyte Code	Analyte	# 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	IA %RSD	Average Range (R-bar)	Horwitz %RSD
005	Urea Nitrogen (%)	5	5	45.32	1.454	45.32		1.454	0.6501	3.21%		1.779	2.25%
006	Biuret Nitrogen (%)	4	4	0.7388	0.2869	0.7388		0.2869	0.1435	38.84%		0.0175	4.19%
007	Urea (%)	3	3	46.24	0.0427	46.24		0.0427	0.0247	0.09%		0.1333	2.25%
008	Biuret (%)	16	15	0.8283	0.1983	0.8475		0.1151	0.0297	13.58%		0.0184	4.10%
010	Total Nitrogen (46%)	78	77	46.18	0.5191	46.18	0.8800	0.3530	0.0402	0.76%	0.95%	0.1509	2.25%
041	Direct Available Phosphorus as P2O5 (%)	2	2	0.0580	0.0594								
050	Soluble Potassium as K2O (%)	2	2	0.0550	0.0636								
060	Water (Free) (%)	17	16	0.2401	0.1927	0.2076		0.1044	0.0261	50.28%		0.0111	5.07%
101	Acid Soluble Calcium (%)	1		0.0275									
121	Acid Soluble Magnesium (%)	1		0.0115									
148	Total Sulfur (%)	1		0.0000									
151	Acid Soluble Arsenic (ppm)	1		0.0650									
165	Acid Soluble Boron (%)	2	2	0.5150	0.7212								
181	Acid Soluble Cadmium (ppm)	1		0.0100									
191	Acid Soluble Chromium (ppm)	1		1.445									
202	Acid Soluble Cobalt (ppm)	1		0.0100									
221	Acid Soluble Copper (%)	2	2	0.9473	1.333								
241	Acid Soluble Iron (%)	1		0.0010									
251	Acid Soluble Lead (ppm)	1		0.0600									
261	Acid Soluble Manganese (%)	2	1	4.030									
281	Acid Soluble Mercury (ppm)	1		0.0550									
289	Acid Soluble Molybdenum (ppm)	1		0.0850									
291	Acid Soluble Nickel (ppm)	1		0.3150									
301	Acid Soluble Selenium (ppm)	1		0.0100									
311	Sodium (%)	1		0.0415									
321	Acid Soluble Zinc (%)	2	1	20.94									

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Analytes: 26

Sample # 160511

Lab Values

Labs Reporting: 82

Urea

Issue Date : 06/30/2016

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
005	Urea Nitrogen (%)	0309	43.64	5.890	45.32	1.454	1.779	5	-1.16	005.99	0
005	Urea Nitrogen (%)	0394	44.17	1.675	45.32	1.454	1.779	5	-0.79	005.99	0
005	Urea Nitrogen (%)	0389	45.30	1.000	45.32	1.454	1.779	5	-0.01	005.00	0
005	Urea Nitrogen (%)	0397	46.39	0.0600	45.32	1.454	1.779	5	0.74	005.99	0
005	Urea Nitrogen (%)	0300	47.10	0.2700	45.32	1.454	1.779	5	1.22	005.99	0
006	Biuret Nitrogen (%)	0371	0.3200	0.0200	0.7388	0.2869	0.0175	4	-1.46	006.10	0
006	Biuret Nitrogen (%)	0481	0.7900	0.0400	0.7388	0.2869	0.0175	4	0.18	006.10	0
006	Biuret Nitrogen (%)	0498	0.8950	0.0100	0.7388	0.2869	0.0175	4	0.54	006.10	0
006	Biuret Nitrogen (%)	0506	0.9500	0.0000	0.7388	0.2869	0.0175	4	0.74	006.99	0
007	Urea (%)	0169	46.20	0.0600	46.24	0.0427	0.1333	3	-0.94	007.00	0
007	Urea (%)	0486	46.24	0.2300	46.24	0.0427	0.1333	3	-0.12	007.00	0
007	Urea (%)	0356	46.29	0.1100	46.24	0.0427	0.1333	3	1.05	007.99	0
008	Biuret (%)	0520	0.2400	0.0200	0.8475	0.1151	0.0184	15	-5.28	008.10	0
008	Biuret (%)	0397	0.7697	0.0094	0.8475	0.1151	0.0184	15	-0.68	008.10	0
008	Biuret (%)	0220	0.7700	0.0400	0.8475	0.1151	0.0184	15	-0.67	008.99	0
008	Biuret (%)	0513	0.7790	0.0180	0.8475	0.1151	0.0184	15	-0.60	008.10	0
008	Biuret (%)	0356	0.7795	0.0450	0.8475	0.1151	0.0184	15	-0.59	008.99	0
008	Biuret (%)	0415	0.7881	0.0363	0.8475	0.1151	0.0184	15	-0.52	008.10	0
008	Biuret (%)	0456	0.7885	0.0270	0.8475	0.1151	0.0184	15	-0.51	008.10	0
008	Biuret (%)	0510	0.8100	0.0200	0.8475	0.1151	0.0184	15	-0.33	008.10	0
008	Biuret (%)	0493	0.8450	0.0100	0.8475	0.1151	0.0184	15	-0.02	008.10	0
008	Biuret (%)	0405	0.8525	0.0090	0.8475	0.1151	0.0184	15	0.04	008.10	0
008	Biuret (%)	0487	0.9000	0.0000	0.8475	0.1151	0.0184	15	0.46	008.99	0
008	Biuret (%)	0450	0.9650	0.0100	0.8475	0.1151	0.0184	15	1.02	008.10	0
008	Biuret (%)	0090	0.9700	0.0000	0.8475	0.1151	0.0184	15	1.06	008.10	0
008	Biuret (%)	0200	1.000	0.0200	0.8475	0.1151	0.0184	15	1.33	008.10	0
008	Biuret (%)	0394	1.167	0.0107	0.8475	0.1151	0.0184	15	2.78	008.99	0
008	Biuret (%)	0444	0.8900	0.1000	0.8475	0.1151	0.0184	15	0.37	008.10	1
010	Total Nitrogen (46%)	0444	44.64*	0.3900	46.18	0.3530	0.1509	77	-4.36	010.60	0
010	Total Nitrogen (46%)	0377	44.65*	0.0100	46.18	0.3530	0.1509	77	-4.33	010.60	0
010	Total Nitrogen (46%)	0102	45.33	0.3400	46.18	0.3530	0.1509	77	-2.39	010.60	0
010	Total Nitrogen (46%)	0292	45.36	0.0800	46.18	0.3530	0.1509	77	-2.31	010.60	0
010	Total Nitrogen (46%)	0498	45.45	0.1000	46.18	0.3530	0.1509	77	-2.05	010.12	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total Nitrogen (46%)	0035	45.47	0.1400	46.18	0.3530	0.1509	77	-2.00	010.60	0
010	Total Nitrogen (46%)	0483	45.49	0.0320	46.18	0.3530	0.1509	77	-1.93	010.60	0
010	Total Nitrogen (46%)	0519	45.60	0.0500	46.18	0.3530	0.1509	77	-1.64	010.99	0
010	Total Nitrogen (46%)	0389	45.60	0.2000	46.18	0.3530	0.1509	77	-1.63	010.60	0
010	Total Nitrogen (46%)	0487	45.60	0.0000	46.18	0.3530	0.1509	77	-1.63	010.99	0
010	Total Nitrogen (46%)	0211	45.73	0.2300	46.18	0.3530	0.1509	77	-1.27	010.99	0
010	Total Nitrogen (46%)	0200	45.76	0.0400	46.18	0.3530	0.1509	77	-1.18	010.11	0
010	Total Nitrogen (46%)	0114	45.81	0.0500	46.18	0.3530	0.1509	77	-1.05	010.11	0
010	Total Nitrogen (46%)	0070	45.82	0.1600	46.18	0.3530	0.1509	77	-1.01	010.60	0
010	Total Nitrogen (46%)	0520	45.83	0.0300	46.18	0.3530	0.1509	77	-0.99	010.99	0
010	Total Nitrogen (46%)	0500	45.86	0.0400	46.18	0.3530	0.1509	77	-0.89	010.11	0
010	Total Nitrogen (46%)	0231	45.87	0.1400	46.18	0.3530	0.1509	77	-0.86	010.60	0
010	Total Nitrogen (46%)	0481	45.96	0.2200	46.18	0.3530	0.1509	77	-0.61	010.12	0
010	Total Nitrogen (46%)	0157	46.00	0.2000	46.18	0.3530	0.1509	77	-0.50	010.60	0
010	Total Nitrogen (46%)	0105	46.01	0.0370	46.18	0.3530	0.1509	77	-0.47	010.60	0
010	Total Nitrogen (46%)	0043	46.02	0.0900	46.18	0.3530	0.1509	77	-0.45	010.60	0
010	Total Nitrogen (46%)	0457	46.02	0.0830	46.18	0.3530	0.1509	77	-0.44	010.60	0
010	Total Nitrogen (46%)	0073	46.03	0.0100	46.18	0.3530	0.1509	77	-0.43	010.60	0
010	Total Nitrogen (46%)	0456	46.03	0.1400	46.18	0.3530	0.1509	77	-0.41	010.11	0
010	Total Nitrogen (46%)	0481	46.07	0.0200	46.18	0.3530	0.1509	77	-0.30	010.60	0
010	Total Nitrogen (46%)	0420	46.09	0.0700	46.18	0.3530	0.1509	77	-0.26	010.99	0
010	Total Nitrogen (46%)	0234	46.09	0.0900	46.18	0.3530	0.1509	77	-0.26	010.60	0
010	Total Nitrogen (46%)	0506	46.10	0.0000	46.18	0.3530	0.1509	77	-0.21	010.99	0
010	Total Nitrogen (46%)	0037	46.11	0.0900	46.18	0.3530	0.1509	77	-0.20	010.60	0
010	Total Nitrogen (46%)	0095	46.11	0.0700	46.18	0.3530	0.1509	77	-0.20	010.60	0
010	Total Nitrogen (46%)	0402	46.11	0.3000	46.18	0.3530	0.1509	77	-0.18	010.60	0
010	Total Nitrogen (46%)	0371	46.13	0.0200	46.18	0.3530	0.1509	77	-0.13	010.11	0
010	Total Nitrogen (46%)	0451	46.15	0.1000	46.18	0.3530	0.1509	77	-0.07	010.60	0
010	Total Nitrogen (46%)	0416	46.16	0.1900	46.18	0.3530	0.1509	77	-0.06	010.11	0
010	Total Nitrogen (46%)	0041	46.19	0.6000	46.18	0.3530	0.1509	77	0.04	010.60	0
010	Total Nitrogen (46%)	0029	46.20	0.0100	46.18	0.3530	0.1509	77	0.06	010.60	0
010	Total Nitrogen (46%)	0260	46.20	0.4430	46.18	0.3530	0.1509	77	0.06	010.60	0
010	Total Nitrogen (46%)	0096	46.20	0.0200	46.18	0.3530	0.1509	77	0.07	010.60	0
010	Total Nitrogen (46%)	0086	46.20	0.1440	46.18	0.3530	0.1509	77	0.08	010.60	0
010	Total Nitrogen (46%)	0510	46.21	0.0300	46.18	0.3530	0.1509	77	0.08	010.11	0
010	Total Nitrogen (46%)	0405	46.21	0.0100	46.18	0.3530	0.1509	77	0.08	010.60	0
010	Total Nitrogen (46%)	0291	46.23	0.0100	46.18	0.3530	0.1509	77	0.14	010.60	0
010	Total Nitrogen (46%)	0233	46.23	0.4700	46.18	0.3530	0.1509	77	0.14	010.60	0
010	Total Nitrogen (46%)	0090	46.25	0.1300	46.18	0.3530	0.1509	77	0.20	010.11	0
010	Total Nitrogen (46%)	0513	46.26	0.0600	46.18	0.3530	0.1509	77	0.24	010.11	0
010	Total Nitrogen (46%)	0508	46.26	0.0200	46.18	0.3530	0.1509	77	0.24	010.99	0
010	Total Nitrogen (46%)	0360	46.27	0.1600	46.18	0.3530	0.1509	77	0.27	010.60	0
010	Total Nitrogen (46%)	0309	46.28	0.2900	46.18	0.3530	0.1509	77	0.28	010.11	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total Nitrogen (46%)	0324	46.30	0.0000	46.18	0.3530	0.1509	77	0.35	010.60	0
010	Total Nitrogen (46%)	0493	46.30	0.1000	46.18	0.3530	0.1509	77	0.35	010.99	0
010	Total Nitrogen (46%)	0452	46.31	0.0100	46.18	0.3530	0.1509	77	0.37	010.60	0
010	Total Nitrogen (46%)	0513	46.34	0.0500	46.18	0.3530	0.1509	77	0.45	010.99	0
010	Total Nitrogen (46%)	0105	46.35	0.1500	46.18	0.3530	0.1509	77	0.48	010.11	0
010	Total Nitrogen (46%)	0027	46.35	0.1000	46.18	0.3530	0.1509	77	0.50	010.99	0
010	Total Nitrogen (46%)	0472	46.37	0.4100	46.18	0.3530	0.1509	77	0.54	010.60	0
010	Total Nitrogen (46%)	0177	46.37	0.2800	46.18	0.3530	0.1509	77	0.55	010.60	0
010	Total Nitrogen (46%)	0042	46.37	0.3400	46.18	0.3530	0.1509	77	0.55	010.60	0
010	Total Nitrogen (46%)	0136	46.39	0.4400	46.18	0.3530	0.1509	77	0.61	010.60	0
010	Total Nitrogen (46%)	0354	46.39	0.0000	46.18	0.3530	0.1509	77	0.61	010.60	0
010	Total Nitrogen (46%)	0034	46.40	0.0800	46.18	0.3530	0.1509	77	0.64	010.60	0
010	Total Nitrogen (46%)	0025	46.41	0.0100	46.18	0.3530	0.1509	77	0.65	010.60	0
010	Total Nitrogen (46%)	0055	46.42	0.2300	46.18	0.3530	0.1509	77	0.68	010.60	0
010	Total Nitrogen (46%)	0023	46.49	0.0690	46.18	0.3530	0.1509	77	0.90	010.60	0
010	Total Nitrogen (46%)	0390	46.50	0.4000	46.18	0.3530	0.1509	77	0.92	010.60	0
010	Total Nitrogen (46%)	0450	46.50	0.0000	46.18	0.3530	0.1509	77	0.92	010.60	0
010	Total Nitrogen (46%)	0220	46.50	0.0800	46.18	0.3530	0.1509	77	0.92	010.99	0
010	Total Nitrogen (46%)	0482	46.55	0.5000	46.18	0.3530	0.1509	77	1.06	010.60	0
010	Total Nitrogen (46%)	0072	46.56	0.1400	46.18	0.3530	0.1509	77	1.09	010.60	0
010	Total Nitrogen (46%)	0307	46.58	0.0400	46.18	0.3530	0.1509	77	1.15	010.60	0
010	Total Nitrogen (46%)	0007	46.60	0.4000	46.18	0.3530	0.1509	77	1.20	010.60	0
010	Total Nitrogen (46%)	0040	46.60	0.6000	46.18	0.3530	0.1509	77	1.20	010.60	0
010	Total Nitrogen (46%)	0516	46.60	0.0000	46.18	0.3530	0.1509	77	1.20	010.60	0
010	Total Nitrogen (46%)	0422	47.13	0.0720	46.18	0.3530	0.1509	77	2.70	010.60	0
010	Total Nitrogen (46%)	0230	47.30	0.4000	46.18	0.3530	0.1509	77	3.19	010.60	0
010	Total Nitrogen (46%)	0485	47.34	0.1600	46.18	0.3530	0.1509	77	3.30	010.60	0
010	Total Nitrogen (46%)	0368	47.43	0.3070	46.18	0.3530	0.1509	77	3.55	010.60	0
010	Total Nitrogen (46%)	0406	48.09	0.0900	46.18	0.3530	0.1509	77	5.41	010.60	0
010	Total Nitrogen (46%)	0325	45.95	0.7000	46.18	0.3530	0.1509	77	-0.64	010.60	1
041	Direct Available Phosphorus as P2O5 (%)	0354	0.0160	0.0000				2		041.60	0
041	Direct Available Phosphorus as P2O5 (%)	0325	0.1000	0.0000				2		041.50	0
050	Soluble Potassium as K2O (%)	0354	0.0100	0.0000				2		050.52	0
050	Soluble Potassium as K2O (%)	0325	0.1000	0.0000				2		050.99	0
060	Water (Free) (%)	0007	0.0400	0.0200	0.2076	0.1044	0.0111	16	-1.61	060.00	0
060	Water (Free) (%)	0405	0.0850	0.0300	0.2076	0.1044	0.0111	16	-1.17	060.00	0
060	Water (Free) (%)	0220	0.1200	0.0200	0.2076	0.1044	0.0111	16	-0.84	060.00	0
060	Water (Free) (%)	0394	0.1500	0.0000	0.2076	0.1044	0.0111	16	-0.55	060.20	0
060	Water (Free) (%)	0096	0.1600	0.0000	0.2076	0.1044	0.0111	16	-0.46	060.00	0
060	Water (Free) (%)	0456	0.1650	0.0100	0.2076	0.1044	0.0111	16	-0.41	060.00	0
060	Water (Free) (%)	0510	0.1700	0.0200	0.2076	0.1044	0.0111	16	-0.36	060.99	0
060	Water (Free) (%)	0513	0.1805	0.0050	0.2076	0.1044	0.0111	16	-0.26	060.99	0
060	Water (Free) (%)	0416	0.2062	0.0224	0.2076	0.1044	0.0111	16	-0.01	060.00	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
060	Water (Free) (%)	0371	0.2200	0.0200	0.2076	0.1044	0.0111	16	0.12	060.20	0
060	Water (Free) (%)	0493	0.2250	0.0100	0.2076	0.1044	0.0111	16	0.17	060.20	0
060	Water (Free) (%)	0090	0.2500	0.0000	0.2076	0.1044	0.0111	16	0.41	060.00	0
060	Water (Free) (%)	0506	0.3000	0.0000	0.2076	0.1044	0.0111	16	0.89	060.30	0
060	Water (Free) (%)	0394	0.3100	0.0000	0.2076	0.1044	0.0111	16	0.98	060.30	0
060	Water (Free) (%)	0200	0.3700	0.0200	0.2076	0.1044	0.0111	16	1.56	060.20	0
060	Water (Free) (%)	0520	0.8900	0.0000	0.2076	0.1044	0.0111	16	6.54	060.30	0
060	Water (Free) (%)	0481	2.085	0.1300	0.2076	0.1044	0.0111	16	17.99	060.30	1
101	Acid Soluble Calcium (%)	0354	0.0275	0.0050				1		101.30	0
121	Acid Soluble Magnesium (%)	0354	0.0115	0.0030				1		121.30	0
148	Total Sulfur (%)	0354	0.0000	0.0000				0		148.99	4
151	Acid Soluble Arsenic (ppm)	0519	0.0650	0.0100				1		151.30	0
165	Acid Soluble Boron (%)	0354	0.0050	0.0000				2		165.30	0
165	Acid Soluble Boron (%)	0234	1.025	0.0100				2		165.30	0
181	Acid Soluble Cadmium (ppm)	0519	0.0100	0.0000				1		181.30	0
191	Acid Soluble Chromium (ppm)	0519	1.445	0.0900				1		191.30	0
202	Acid Soluble Cobalt (ppm)	0519	0.0100	0.0000				1		202.30	0
221	Acid Soluble Copper (%)	0354	0.0045	0.0030				2		221.30	0
221	Acid Soluble Copper (%)	0234	1.890	0.1200				2		221.30	0
241	Acid Soluble Iron (%)	0354	0.0010	0.0000				1		241.30	0
251	Acid Soluble Lead (ppm)	0519	0.0600	0.0000				1		251.30	0
261	Acid Soluble Manganese (%)	0234	4.030	0.0200				1		261.31	0
261	Acid Soluble Manganese (%)	0354	0.0000	0.0000				1		261.30	4
281	Acid Soluble Mercury (ppm)	0519	0.0550	0.0100				1		281.30	0
289	Acid Soluble Molybdenum (ppm)	0519	0.0850	0.0100				1		289.30	0
291	Acid Soluble Nickel (ppm)	0519	0.3150	0.0300				1		291.30	0
301	Acid Soluble Selenium (ppm)	0519	0.0100	0.0000				1		301.30	0
311	Sodium (%)	0354	0.0415	0.0150				1		311.99	0
321	Acid Soluble Zinc (%)	0234	20.94	1.920				1		321.30	0
321	Acid Soluble Zinc (%)	0354	0.0000	0.0000				1		321.30	4

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 and a 4 flag indicates rejected due to 0 value submitted. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are included for information only (Grey). An offset lab value with an asterisk indicates that the value is lower than the Analyte value less the IA. Method or 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.