

Agriculture Laboratory Proficiency (ALP) Program Individual Performance Analysis Report

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The Agriculture Laboratory Proficiency (ALP) Program Spring 2010 Round cycle 11 was completed May 18, 2010, with results provided by fifty-seven labs from the United States, Canada, Greece and South Africa. Proficiency samples consisted of five soils, three botanical and three water samples. Analytical methods evaluated are based on those published by AOAC, four regional soil work groups, the Soil Plant Analysis Council and Forestry Canada.

Standard Reference Soils (SRS), materials used for the soils and environmental programs were: SRS-1001 a silt loam from near Owens borough, KY; SRS-1002 series a loam collected near Twin Falls, ID; SRS-1003 series Platte loam collected from a vine-yard near Sebastopol, CA; SRS-1004 a silty clay loam collected DeKalb, IL; and SRS-1005 series sandy loam collected near Brookings, SD.

Standard Reference Botanical (SRB) materials were: corn stalk from Iowa, orchard grass from Michigan and grass hay mixture. Standard Reference Water (SRW) solutions represent agriculture water samples collected from: Windsor, CO; Kettleman City, CA and Cheyenne, WY.

This Individual Performance Analysis report presents results that are particular to your laboratory. All properties and samples for which your laboratory reported results are presented in this report. An analysis between and within laboratory performance for soil, botanicals, water and environmental properties will follow this page. A summary of results follows immediately after the analysis for each sample type. This summary condenses your between laboratory performance on a single page; this summary may be the best place to start the review of your results. In the future, this report will also present historical results to provide a more complete understanding of laboratory performance.

It is important to remember that all ALP Program evaluations are based on comparative and consensus statistics; users must be aware that small group statistics are inherently less robust than large group statistics, even though robust evaluations have been preferentially chosen. No comparative results are provided for analyses with fewer than 4 reported results. Results of all laboratories that reported for each property may be found in the web-based summary report posted on the CTS Web site.

Quick Key to your Performance Analysis Report

Lab Mean	The mean of the triplicate determinations submitted for each sample-property.
Grand Median	The median of all included Lab Means submitted for each sample-property.
MAD	The median of the differences (absolute values) between the Grand Median and the Lab Means.
95% Conf Interval	The estimated range of value which is likely to include the sample-property value, calculated from the Grand Median and the M.A.D.
WithinLab Performance, k	The ratio (standard or z-score) of each laboratory standard deviation within each sample-property and the WithinLab Avg STD (see below). A score of 1 indicates that variation within a laboratory for that sample-property was the same as the average variation.
WithinLab Avg STD	The average (sum of squares) of the standard deviations of the triplicate determinations submitted for each sample-property.
Laboratory-Sample Bias (from summary page)	The ratio (standard or z-score) of each laboratory difference, between the Lab Mean and the Grand Median, and the M.A.D. A score of 0 indicates agreement of the laboratory with the consensus average.



Analysis # 802: Botanicals Properties

Test Code	Analysis	Units	Samples	Lab Mean	Grand Median	MAD	95% Conf Interval	WithinLab Performance, k	WithinLab Avg STD	Labs Rpt
202	NO3 - N Cd Rd.	mg/kg	SRB1001	1,029.7	1,029.7	71.7	821.8 - 1,237.5	0.48	46.5	15
			SRB1002	1,295.3	1,200.0	51.3	1,051.1 - 1,348.9	0.59	51.1	15
			SRB1003	172.3	100.0	75.7	0.0 - 319.4	2.15 X	17.9	15
206	PO4 - P	mg/kg	SRB1001	465.0	545.0	42.7	421.3 - 668.7	0.04	95.0	10
			SRB1002	1,770.3	1,785.2	253.5	1,050.0 - 2,520.3	0.46	54.1	10
			SRB1003	1,482.7	1,688.7	202.5	1,101.4 - 2,275.9	0.10	66.8	10
210	N- Dry Comb.	Percent	SRB1001	0.42	0.60	0.10	0.32 - 0.88	1.99 X	0.05	15
			SRB1002	3.10	2.98	0.10	2.70 - 3.26	1.53	0.03	15
			SRB1003	3.19	2.97	0.09	2.72 - 3.22	2.83 X	0.05	15
212	P	Percent	SRB1001	0.079	0.073	0.003	0.064 - 0.083	0.65	0.009	24
			SRB1002	0.27	0.29	0.014	0.25 - 0.33	0.41	0.02	24
			SRB1003	0.29	0.30	0.014	0.26 - 0.34	0.47	0.01	24
213	K	Percent	SRB1001	1.04	1.05	0.06	0.88 - 1.22	0.12	0.05	25
			SRB1002	1.15	1.15	0.07	0.96 - 1.34	0.21	0.05	25
			SRB1003	1.06	1.12	0.06	0.94 - 1.30	0.21	0.03	25
214	Ca	Percent	SRB1001	0.26 X	0.16	0.018	0.11 - 0.21	1.11	0.01	24
			SRB1002	0.44	0.51	0.030	0.43 - 0.60	1.21	0.02	24
			SRB1003	1.63	1.85	0.10	1.57 - 2.13	1.47	0.06	24
215	Mg	Percent	SRB1001	0.24	0.21	0.010	0.18 - 0.24	1.48	0.01	24
			SRB1002	0.32	0.31	0.013	0.27 - 0.35	0.54	0.02	24
			SRB1003	0.33	0.30	0.015	0.26 - 0.35	1.27	0.01	24
217	Na	Percent	SRB1001	0.080 X	0.010	0.003	0.000 - 0.020	2.65 X	0.004	21
			SRB1002	0.28 X	0.21	0.018	0.15 - 0.26	1.95	0.01	22
			SRB1003	0.087 X	0.031	0.006	0.013 - 0.048	1.62	0.009	21
220	Zn	mg/kg	SRB1001	10.0	10.9	1.33	7.1 - 14.8	0.27	1.3	24
			SRB1002	27.5	28.7	1.27	25.0 - 32.4	0.20	1.9	24
			SRB1003	157.7	164.0	6.33	145.6 - 182.4	0.10	6.0	24
221	Mn	mg/kg	SRB1001	8.00	7.67	1.14	4.37 - 10.98	0.09	1.09	24
			SRB1002	159.0	161.8	7.52	140.0 - 183.6	0.22	9.1	24
			SRB1003	172.3	183.4	8.03	160.1 - 206.7	0.10	5.8	24
222	Fe	mg/kg	SRB1001	47.0	48.6	11.3	15.8 - 81.4	0.23	11.6	24
			SRB1002	139.3	146.4	20.0	88.3 - 204.5	0.29	10.0	24
			SRB1003	142.0	174.3	13.2	136.2 - 212.5	0.20	12.2	24
223	Cu	mg/kg	SRB1001	6.27	6.49	0.58	4.81 - 8.18	0.28	0.89	24
			SRB1002	7.50	8.00	0.98	5.15 - 10.85	0.72	0.64	24
			SRB1003	73.8	75.7	4.73	62.0 - 89.4	0.17	3.8	24



Agriculture Laboratory Proficiency (ALP) Program

Performance Analysis Report - Test Cycle 11

CTS Lab Code: U6291A

Laboratory Performance Summary - Botanicals Properties

Test Code	Analysis	Performance Review of Laboratory-Sample Biases (numbers closer to zero indicate agreement with other laboratories)		
		SRB1001	SRB1002	SRB1003
202	NO3 - N Cd Rd.	0.00	1.86	0.96
206	PO4 - P	-1.88	-0.06	-1.02
210	N- Dry Comb.	-1.89	1.26	2.58
212	P	1.70	-1.15	-0.95
213	K	-0.11	0.00	-0.95
214	Ca	5.67	-2.41	-2.25
215	Mg	2.50	0.50	1.54
217	Na	21.00	4.15	9.33
220	Zn	-0.68	-0.98	-1.00
221	Mn	0.29	-0.37	-1.38
222	Fe	-0.14	-0.36	-2.46
223	Cu	-0.39	-0.51	-0.40