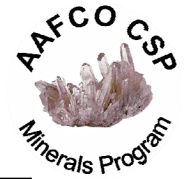


AAFCO Check Sample 2015 Minerals Program

A Targeted and Engineered Concentration Program



Approach: 16 Target Elements

- This quarterly program focuses on minerals of health and toxicological importance in the feed and food chain at significant concentration ranges.
- Minerals are spiked into the feed or food materials to achieve the desired concentrations that are not available in the AAFCO monthly Check Sample Program.

Samples for 2015:

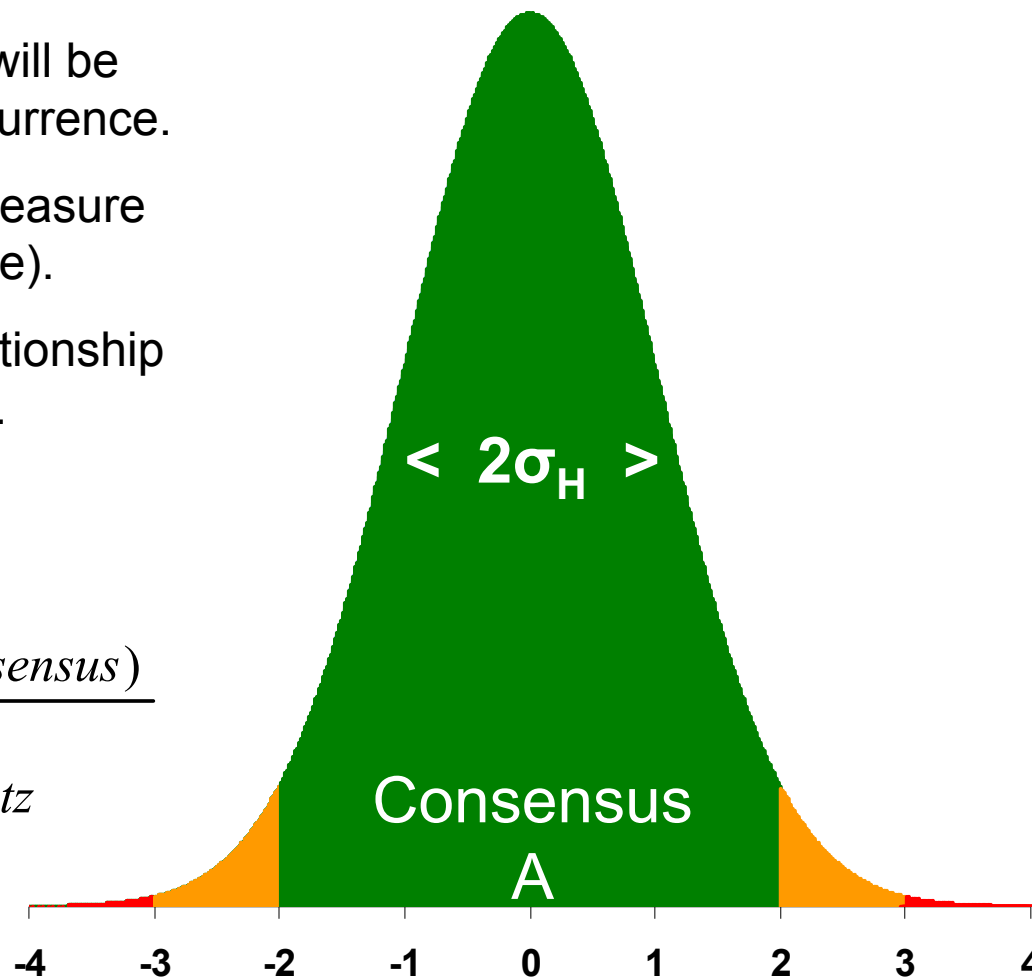
- **Poultry Layer Feed (Reports 04/30/2015)**
- **Rice (Reports 07/31/2015)**
- Swine Feed or Dairy Feed (Due 10/10/2015)
- Dog Food (Due 01/10/2016)

Code	Element	Units
015	Aluminum	ppm
516	Arsenic	ppm
017	Boron	ppm
518	Cadmium	ppm
520	Chromium	ppm
021	Cobalt	ppm
022	Copper	ppm
023	Fluorine	ppm
024	Iodine	ppm
526	Lead	ppm
529	Mercury	ppb
038	Molybdenum	ppm
539	Nickel	ppm
034	Selenium	ppm
036	Sulfur	%
041	Vanadium	ppm

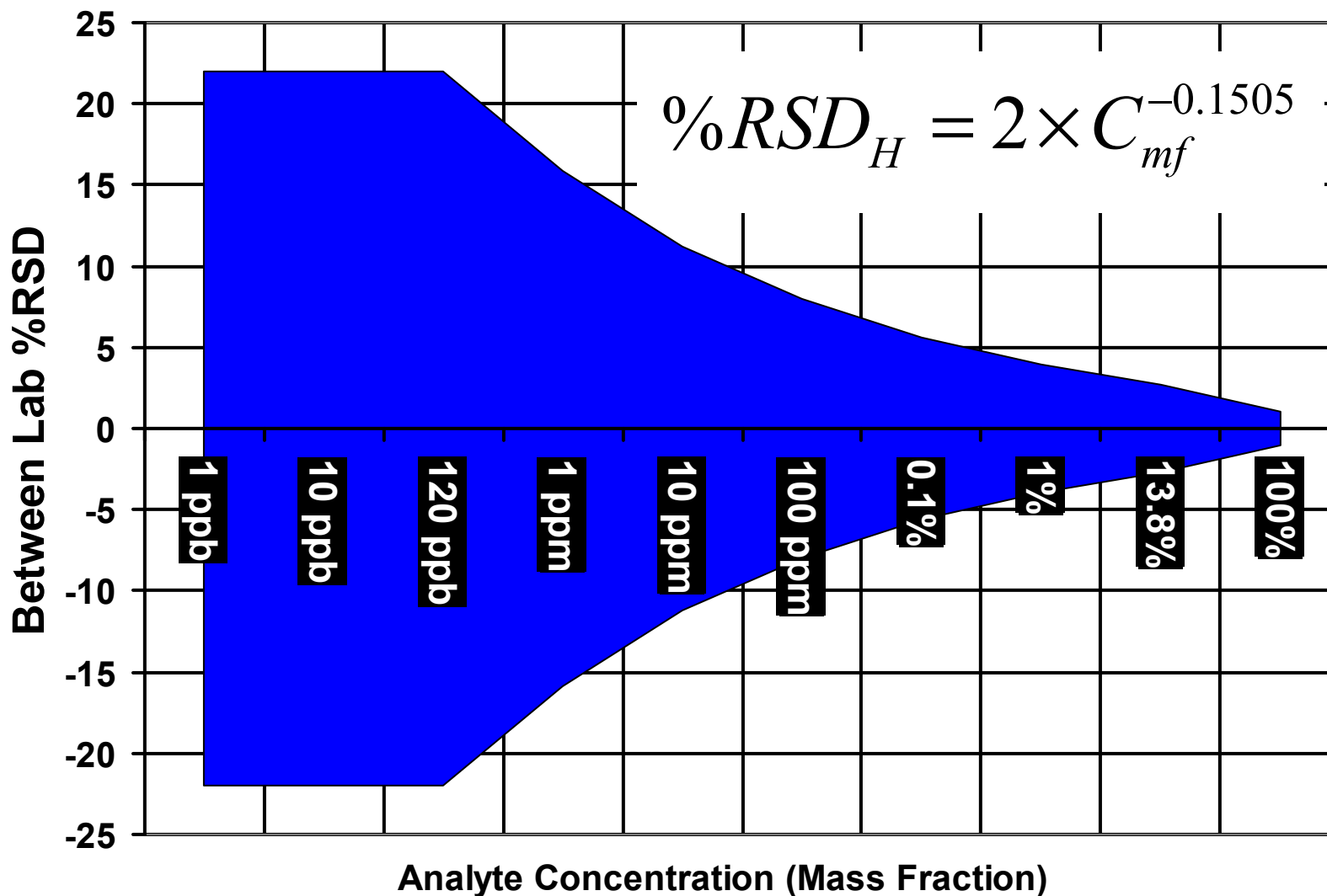
Statistical Approach

- Precise final concentration will be unknown due to natural occurrence.
- We will use a Consensus measure of Location (Robust Estimate).
- We will use the Horwitz relationship as a measure of Dispersion.

$$Z = \frac{X_{LAB} - X_{A(Consensus)}}{\sigma_{ModifiedHorwitz}}$$



Modified Horwitz Trumpet



2015 Samples Completed to Date

Sample #	Sample Name	# Labs	# Methods	# Analytes
201551	Poultry Layer Feed	13	108	28
201552	Rice	14	107	31

Sample #	Sample Name	Compliant Z	Warning Z	Actionable Z
201551	Poultry Layer Feed	75.0%	6.8%	18.2%
201552	Rice	85.2%	3.0%	11.8%



Calculated Adjusted Spike as Assigned Value

- **Occasionally** the lab data will be wildly dispersed.
- Even Consensus will not make sense.
- We need another reference to provide reasonable Z scores.

Calculated Adjusted Spike = Base Feed Analyte Value + Spike Added



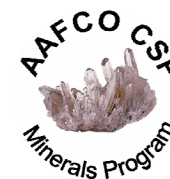
From Poultry Layer Feed 201432

201551 Assigned Value = 201432 Base Value + Spike Value



From PFP Brown Rice 201542

201552 Assigned Value = 201542 Base Value + Spike Value



Spikes in Poultry Layer Feed

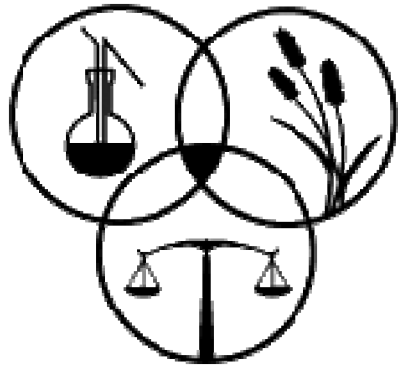
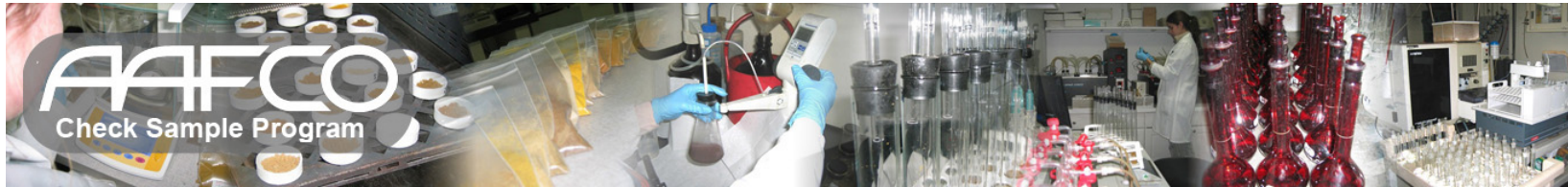
201551		# Labs	201432 + Spike	Assigned Value	Z Score of Spike	Calculated Spike ppm	Spike
Code	Analyte (ppm)						
015	Aluminum	9	?	367.24			
516	Arsenic	11	30.12	27.62	0.93	30.0	As 10 mg/mL
017	Boron	5	238.6	220.91	1.13	231.8	H ₃ BO ₃
518	Cadmium	11	10.04	8.66	1.38	10.0	Cd 10 mg/mL
520	Chromium	12	35.60	33.03	0.83	35.6	CrCl ₃ ·6H ₂ O
021	Cobalt	13	3.73	2.90	2.10	3.1	Co 10 mg/mL
022	Copper	13	139.14	127.38	1.20	124.7	CuCl ₂ ·2H ₂ O
023	Fluorine	3	156.94	145.75	1.02	149.3	NaF
024	Iodine	1	399.11			399.1	KI
526	Lead	10	100.48	86.04	2.05	100.5	Pb(CH ₃ CO ₂) ₂ · 3H ₂ O
529	Mercury (ppb)	7	510.81	510.81	0.00	501.3	Hg 1 mg/mL
038	Molybdenum	13	42.14	37.44	1.35	40.9	Na ₂ MoO ₄ · 2H ₂ O
539	Nickel	8	62.47	107.35	-5.28	60.5	NiSO ₄ · 6H ₂ O
034	Selenium	9	3.58	3.08	1.20	3.0	Se 1 mg/mL
041	Vanadium	7	100.53	90.14	1.42	100.2	NaVO ₃
036	Sulfur (%)	7	0.21	0.23	-1.99	0	

Spikes in Rice

201552		# Labs	201542 + Spike	Assigned Value	Z Score of Spike	Calculated Spike ppm	Spike
Code	Analyte (ppm)						
015	Aluminum	4	?				
516	Arsenic	12	10.18	8.98	1.16	10.0	As 10 mg/mL
017	Boron	5	462.4	393.5	2.69	462.4	H ₃ BO ₃
518	Cadmium	12	3.03	2.57	1.29	3.0	Cd 10 mg/mL
520	Chromium	12	150.9	128.0	2.32	148.8	CrCl ₃ ·6H ₂ O
021	Cobalt	11	6.09	4.95	1.83	6.0	Co 10 mg/mL
022	Copper	13	253.8	221.8	2.03	250.5	CuCl ₂ ·2H ₂ O
023	Fluorine	3	21.15	38.60	-4.90	21.2	NaF
024	Iodine	2	602.9			602.9	KI
526	Lead	10	199.8	170.5	2.33	199.8	Pb(CH ₃ CO ₂) ₂ · 3H ₂ O
529	Mercury (ppb)	7	2004.0	2004.0	0.00	2004.0	Hg 1 mg/mL
038	Molybdenum	11	301.5	259.4	2.34	300.7	Na ₂ MoO ₄ · 2H ₂ O
539	Nickel	7	251.4	221.1	1.93	251.4	NiSO ₄ · 6H ₂ O
034	Selenium	11	5.15	4.51	1.12	5.0	Se 1 mg/mL
041	Vanadium	6	9.86	6.03	5.21	9.9	NaVO ₃
036	Sulfur (%)	9	0.12	0.11	0.49	0.014	NiSO ₄ ·6H ₂ O

All Targets Will be Above The LOQ

- If you Do NOT Detect it, then Do NOT Report it.
 - Report sufficient decimal places to include significant digits at the units requested.
 - Report raw data in the required units
(35 ppm is 0.0035 % not 0.00 %).
 - Do NOT report zero's.
 - 0's are flagged (4) and not used in calculations
 - BUT! You will receive a Z score based on 0.
-



201551 Minerals Program

Analyte Report



Proficiency Testing

Sample # 201551

Poultry Layer Feed

All Tests Report
Minerals Program

Labs Reporting: 13

Issue Date : 04/30/2015

Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCO CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Horwitz SD	R-bar	# Labs			
002	Protein (%)	508	45.919	0.22900			0.22900	1			
003	Fat (%)	508	0.31935	0.03050			0.03050	1			
015	Aluminum (mg / kg (ppm))	870	3.2940	0.08000	367.24	24.152	24.230	9	-15.07	015.42	0
015	Aluminum (mg / kg (ppm))	510	242.50	5.0000	367.24	24.152	24.230	9	-5.16	015.43	0
015	Aluminum (mg / kg (ppm))	42	345.00	74.000	367.24	24.152	24.230	9	-0.92	015.42	0
015	Aluminum (mg / kg (ppm))	160	363.50	33.000	367.24	24.152	24.230	9	-0.16	015.42	0
015	Aluminum (mg / kg (ppm))	227	370.00	20.000	367.24	24.152	24.230	9	0.11	015.41	0
015	Aluminum (mg / kg (ppm))	98	381.70	5.0000	367.24	24.152	24.230	9	0.60	015.43	0
015	Aluminum (mg / kg (ppm))	964	382.62	39.990	367.24	24.152	24.230	9	0.64	015.41	0
015	Aluminum (mg / kg (ppm))	553	408.00	28.000	367.24	24.152	24.230	9	1.69	015.53	0
015	Aluminum (mg / kg (ppm))	208	426.50	13.000	367.24	24.152	24.230	9	2.45	015.41	0
017	Boron (mg / kg (ppm))	870	2.1905	0.06700	220.91	15.684	3.4734	5	-13.46	017.42	0
017	Boron (mg / kg (ppm))	510	192.00	4.0000	220.91	15.684	3.4734	5	1.14	017.43	0
017	Boron (mg / kg (ppm))	208	209.00	4.0000	220.91	15.684	3.4734	5	2.45	017.44	0
017	Boron (mg / kg (ppm))	98	229.15	4.3000	220.91	15.684	3.4734	5	4.00	017.43	0
017	Boron (mg / kg (ppm))	160	253.50	5.0000	220.91	15.684	3.4734	5	5.87	017.42	0
019	Calcium (%)	510	3.2800	0.04000	3.7551	0.12308	0.15646	5	-3.86	019.43	0
019	Calcium (%)	208	3.7180	0.20200	3.7551	0.12308	0.15646	5	-0.30	019.41	0
019	Calcium (%)	555	3.8000	0.40000	3.7551	0.12308	0.15646	5	0.36	019.42	0
019	Calcium (%)	964	3.8720	0.08700	3.7551	0.12308	0.15646	5	0.95	019.41	0
019	Calcium (%)	964	4.1056	0.05330	3.7551	0.12308	0.15646	5	2.85	019.43	0
021	Cobalt (mg / kg (ppm))	870	0.02710	0.00060	2.9005	0.39528	0.11584	13	-7.27	021.42	0
021	Cobalt (mg / kg (ppm))	208	2.5700	0.04000	2.9005	0.39528	0.11584	13	-0.84	021.31	0
021	Cobalt (mg / kg (ppm))	227	2.6000	0.20000	2.9005	0.39528	0.11584	13	-0.76	021.31	0
021	Cobalt (mg / kg (ppm))	510	2.6650	0.01000	2.9005	0.39528	0.11584	13	-0.60	021.43	0
021	Cobalt (mg / kg (ppm))	964	2.8190	0.05250	2.9005	0.39528	0.11584	13	-0.21	021.41	0
021	Cobalt (mg / kg (ppm))	42	2.8700	0.14000	2.9005	0.39528	0.11584	13	-0.08	021.32	0
021	Cobalt (mg / kg (ppm))	33	2.9050	0.11000	2.9005	0.39528	0.11584	13	0.01	021.53	0
021	Cobalt (mg / kg (ppm))	160	2.9850	0.17000	2.9005	0.39528	0.11584	13	0.21	021.42	0
021	Cobalt (mg / kg (ppm))	555	3.0500	0.10000	2.9005	0.39528	0.11584	13	0.38	021.52	0
021	Cobalt (mg / kg (ppm))	553	3.0500	0.30000	2.9005	0.39528	0.11584	13	0.38	021.53	0

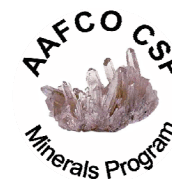
Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Horwitz SD	R-bar	# Labs			
021	Cobalt (mg / kg (ppm))	964	3.1695	0.35580	2.9005	0.39528	0.11584	13	0.68	021.43	0
021	Cobalt (mg / kg (ppm))	98	3.2225	0.02700	2.9005	0.39528	0.11584	13	0.81	021.43	0
021	Cobalt (mg / kg (ppm))	563	4.7000	0.00000	2.9005	0.39528	0.11584	13	4.55	021.31	0
022	Copper (mg / kg (ppm))	870	1.2690	0.02800	127.38	9.8243	4.6175	13	-12.84	022.42	0
022	Copper (mg / kg (ppm))	964	117.12	7.9900	127.38	9.8243	4.6175	13	-1.04	022.41	0
022	Copper (mg / kg (ppm))	208	119.00	14.800	127.38	9.8243	4.6175	13	-0.85	022.41	0
022	Copper (mg / kg (ppm))	510	120.00	2.0000	127.38	9.8243	4.6175	13	-0.75	022.43	0
022	Copper (mg / kg (ppm))	563	124.10	1.0000	127.38	9.8243	4.6175	13	-0.33	022.31	0
022	Copper (mg / kg (ppm))	208	126.50	1.0000	127.38	9.8243	4.6175	13	-0.09	022.31	0
022	Copper (mg / kg (ppm))	227	128.00	4.0000	127.38	9.8243	4.6175	13	0.06	022.41	0
022	Copper (mg / kg (ppm))	553	128.50	3.0000	127.38	9.8243	4.6175	13	0.11	022.41	0
022	Copper (mg / kg (ppm))	555	129.00	4.0000	127.38	9.8243	4.6175	13	0.17	022.52	0
022	Copper (mg / kg (ppm))	98	133.10	4.2000	127.38	9.8243	4.6175	13	0.58	022.53	0
022	Copper (mg / kg (ppm))	555	137.36	0.20000	127.38	9.8243	4.6175	13	1.02	022.42	0
022	Copper (mg / kg (ppm))	964	138.46	1.8100	127.38	9.8243	4.6175	13	1.13	022.43	0
022	Copper (mg / kg (ppm))	160	144.00	16.000	127.38	9.8243	4.6175	13	1.69	022.42	0
023	Fluorine (mg / kg (ppm))	555	145.00	12.000	145.75	11.016	9.6667	3	-3.91	023.01	0
023	Fluorine (mg / kg (ppm))	208	146.50	9.0000	145.75	11.016	9.6667	3	-3.81	023.01	0
023	Fluorine (mg / kg (ppm))	563	314.00	8.0000	145.75	11.016	9.6667	3	7.72	023.01	0
024	Iodine (mg / kg (ppm))	160	349.50	13.000			13.000	1			
025	Iron (mg / kg (ppm))	555	93.940	2.1600	147.66	11.138	3.1280	5	-4.82	025.42	0
025	Iron (mg / kg (ppm))	510	141.50	1.0000	147.66	11.138	3.1280	5	-0.55	025.43	0
025	Iron (mg / kg (ppm))	555	151.00	2.0000	147.66	11.138	3.1280	5	0.30	025.52	0
025	Iron (mg / kg (ppm))	208	164.70	2.8000	147.66	11.138	3.1280	5	1.53	025.41	0
025	Iron (mg / kg (ppm))	964	187.17	7.6800	147.66	11.138	3.1280	5	3.55	025.43	0
025	Iron (mg / kg (ppm))	964	179.37	48.110	147.66	11.138	3.1280	5	2.85	025.41	1
027	Magnesium (%)	510	0.24000	0.00000	0.26313	0.01287	0.01184	5	-1.90	027.43	0
027	Magnesium (%)	964	0.26535	0.00970	0.26313	0.01287	0.01184	5	0.07	027.41	0
027	Magnesium (%)	208	0.26700	0.00400	0.26313	0.01287	0.01184	5	0.19	027.41	0
027	Magnesium (%)	555	0.27000	0.04000	0.26313	0.01287	0.01184	5	0.43	027.42	0
027	Magnesium (%)	964	0.28015	0.00550	0.26313	0.01287	0.01184	5	1.21	027.43	0
028	Manganese (mg / kg (ppm))	510	137.50	5.0000	145.25	10.983	10.760	6	-0.71	028.43	0
028	Manganese (mg / kg (ppm))	208	138.65	5.1000	145.25	10.983	10.760	6	-0.60	028.41	0
028	Manganese (mg / kg (ppm))	555	142.50	13.000	145.25	10.983	10.760	6	-0.25	028.52	0
028	Manganese (mg / kg (ppm))	555	147.60	16.830	145.25	10.983	10.760	6	0.21	028.42	0
028	Manganese (mg / kg (ppm))	964	148.85	16.250	145.25	10.983	10.760	6	0.33	028.41	0
028	Manganese (mg / kg (ppm))	964	161.64	8.3800	145.25	10.983	10.760	6	1.49	028.43	0
031	Phosphorus (%)	510	0.54000	0.00000	0.59278	0.02565	0.02887	6	-2.06	031.43	0
031	Phosphorus (%)	555	0.57500	0.09000	0.59278	0.02565	0.02887	6	-0.69	031.42	0
031	Phosphorus (%)	227	0.58000	0.00000	0.59278	0.02565	0.02887	6	-0.50	031.41	0
031	Phosphorus (%)	208	0.60450	0.03500	0.59278	0.02565	0.02887	6	0.46	031.41	0
031	Phosphorus (%)	964	0.61265	0.01890	0.59278	0.02565	0.02887	6	0.77	031.41	0

Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCO CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Horwitz SD	R-bar	# Labs			
031	Phosphorus (%)	964	0.65485	0.02930	0.59278	0.02565	0.02887	6	2.42	031.43	0
032	Potassium (%)	964	0.91005	0.00030	0.97951	0.03930	0.04725	6	-1.77	032.41	0
032	Potassium (%)	208	0.92650	0.07900	0.97951	0.03930	0.04725	6	-1.35	032.41	0
032	Potassium (%)	510	0.97000	0.00000	0.97951	0.03930	0.04725	6	-0.24	032.43	0
032	Potassium (%)	227	0.98000	0.00000	0.97951	0.03930	0.04725	6	0.01	032.41	0
032	Potassium (%)	555	1.0300	0.14000	0.97951	0.03930	0.04725	6	1.28	032.42	0
032	Potassium (%)	964	1.0605	0.06420	0.97951	0.03930	0.04725	6	2.06	032.43	0
033	Salt as chloride (%)	227	0.75500	0.01000			0.02000	2	-4.31	033.01	0
033	Salt as chloride (%)	510	1.0750	0.03000			0.02000	2	4.31	033.01	0
034	Selenium (mg / kg (ppm))	870	0.07100	0.00060	3.0830	0.41630	0.22620	9	-7.24	034.42	0
034	Selenium (mg / kg (ppm))	160	1.6700	0.34000	3.0830	0.41630	0.22620	9	-3.39	034.42	0
034	Selenium (mg / kg (ppm))	555	2.3500	0.10000	3.0830	0.41630	0.22620	9	-1.76	034.99	0
034	Selenium (mg / kg (ppm))	555	3.0000	0.20000	3.0830	0.41630	0.22620	9	-0.20	034.52	0
034	Selenium (mg / kg (ppm))	33	3.3600	0.60000	3.0830	0.41630	0.22620	9	0.67	034.53	0
034	Selenium (mg / kg (ppm))	208	3.5900	0.60000	3.0830	0.41630	0.22620	9	1.22	034.04	0
034	Selenium (mg / kg (ppm))	98	3.7860	0.00000	3.0830	0.41630	0.22620	9	1.69	034.53	0
034	Selenium (mg / kg (ppm))	964	4.3516	0.14520	3.0830	0.41630	0.22620	9	3.05	034.43	0
034	Selenium (mg / kg (ppm))	563	4.4850	0.05000	3.0830	0.41630	0.22620	9	3.37	034.04	0
035	Sodium (%)	510	0.21650	0.00100	0.23789	0.01181	0.00602	5	-1.81	035.43	0
035	Sodium (%)	964	0.23245	0.00410	0.23789	0.01181	0.00602	5	-0.46	035.41	0
035	Sodium (%)	208	0.23650	0.01300	0.23789	0.01181	0.00602	5	-0.12	035.41	0
035	Sodium (%)	227	0.24900	0.00200	0.23789	0.01181	0.00602	5	0.94	035.41	0
035	Sodium (%)	555	0.25500	0.01000	0.23789	0.01181	0.00602	5	1.45	035.42	0
035	Sodium (%)	964	0.25410	0.05140	0.23789	0.01181	0.00602	5	1.37	035.43	1
036	Sulfur (%)	870	0.20750	0.00480	0.23122	0.01153	0.00991	7	-2.06	036.42	0
036	Sulfur (%)	227	0.21500	0.01000	0.23122	0.01153	0.00991	7	-1.41	036.42	0
036	Sulfur (%)	555	0.21500	0.03000	0.23122	0.01153	0.00991	7	-1.41	036.42	0
036	Sulfur (%)	98	0.22550	0.00100	0.23122	0.01153	0.00991	7	-0.50	036.43	0
036	Sulfur (%)	510	0.24000	0.00000	0.23122	0.01153	0.00991	7	0.76	036.43	0
036	Sulfur (%)	33	0.26000	0.00000	0.23122	0.01153	0.00991	7	2.50	036.43	0
036	Sulfur (%)	964	0.27080	0.02360	0.23122	0.01153	0.00991	7	3.43	036.43	0
037	Zinc (mg / kg (ppm))	555	97.000	8.0000	107.99	8.5387	9.9400	7	-1.29	037.52	0
037	Zinc (mg / kg (ppm))	227	99.500	1.0000	107.99	8.5387	9.9400	7	-0.99	037.41	0
037	Zinc (mg / kg (ppm))	510	103.50	3.0000	107.99	8.5387	9.9400	7	-0.53	037.43	0
037	Zinc (mg / kg (ppm))	964	109.79	11.000	107.99	8.5387	9.9400	7	0.21	037.41	0
037	Zinc (mg / kg (ppm))	208	109.90	2.6000	107.99	8.5387	9.9400	7	0.22	037.41	0
037	Zinc (mg / kg (ppm))	555	113.12	12.330	107.99	8.5387	9.9400	7	0.60	037.42	0
037	Zinc (mg / kg (ppm))	964	142.90	31.650	107.99	8.5387	9.9400	7	4.09	037.43	0
038	Molybdenum (mg / kg (ppm))	870	0.37180	0.00900	37.440	3.4720	1.0495	12	-10.68	038.42	0
038	Molybdenum (mg / kg (ppm))	563	31.000	0.00000	37.440	3.4720	1.0495	12	-1.85	038.34	0
038	Molybdenum (mg / kg (ppm))	208	32.600	1.0000	37.440	3.4720	1.0495	12	-1.39	038.41	0
038	Molybdenum (mg / kg (ppm))	510	34.900	0.40000	37.440	3.4720	1.0495	12	-0.73	038.43	0

Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCCO CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Horwitz SD	R-bar	# Labs			
038	Molybdenum (mg / kg (ppm))	33	36.800	3.0000	37.440	3.4720	1.0495	12	-0.18	038.53	0
038	Molybdenum (mg / kg (ppm))	42	37.850	1.1000	37.440	3.4720	1.0495	12	0.12	038.42	0
038	Molybdenum (mg / kg (ppm))	160	38.250	1.9000	37.440	3.4720	1.0495	12	0.23	038.42	0
038	Molybdenum (mg / kg (ppm))	964	38.809	1.1940	37.440	3.4720	1.0495	12	0.39	038.41	0
038	Molybdenum (mg / kg (ppm))	98	40.115	1.6300	37.440	3.4720	1.0495	12	0.77	038.53	0
038	Molybdenum (mg / kg (ppm))	555	40.225	0.25000	37.440	3.4720	1.0495	12	0.80	038.42	0
038	Molybdenum (mg / kg (ppm))	964	40.570	0.31100	37.440	3.4720	1.0495	12	0.90	038.43	0
038	Molybdenum (mg / kg (ppm))	555	49.900	1.8000	37.440	3.4720	1.0495	12	3.59	038.52	0
038	Molybdenum (mg / kg (ppm))	553	40.800	5.6000	37.440	3.4720	1.0495	12	0.97	038.53	1
040	Barium (mg / kg (ppm))	555	9.4500	0.50000			2.6250	2	-1.03	040.52	0
040	Barium (mg / kg (ppm))	42	11.925	4.7500			2.6250	2	1.03	040.32	0
041	Vanadium (mg / kg (ppm))	870	0.90020	0.03060	90.136	7.3235	3.0558	7	-12.18	041.42	0
041	Vanadium (mg / kg (ppm))	563	75.435	0.45000	90.136	7.3235	3.0558	7	-2.01	041.34	0
041	Vanadium (mg / kg (ppm))	555	87.000	8.0000	90.136	7.3235	3.0558	7	-0.43	041.52	0
041	Vanadium (mg / kg (ppm))	98	92.735	0.61000	90.136	7.3235	3.0558	7	0.35	041.43	0
041	Vanadium (mg / kg (ppm))	160	93.450	3.9000	90.136	7.3235	3.0558	7	0.45	041.42	0
041	Vanadium (mg / kg (ppm))	553	97.550	4.9000	90.136	7.3235	3.0558	7	1.01	041.53	0
041	Vanadium (mg / kg (ppm))	208	97.950	3.5000	90.136	7.3235	3.0558	7	1.07	041.41	0
516	Arsenic, total (mg / kg (ppm))	870	0.22250	0.01600	27.618	2.6812	1.1452	11	-10.22	516.42	0
516	Arsenic, total (mg / kg (ppm))	563	16.110	0.02000	27.618	2.6812	1.1452	11	-4.29	516.00	0
516	Arsenic, total (mg / kg (ppm))	33	25.550	1.5000	27.618	2.6812	1.1452	11	-0.77	516.53	0
516	Arsenic, total (mg / kg (ppm))	160	26.950	2.1000	27.618	2.6812	1.1452	11	-0.25	516.42	0
516	Arsenic, total (mg / kg (ppm))	553	27.150	1.1000	27.618	2.6812	1.1452	11	-0.17	516.53	0
516	Arsenic, total (mg / kg (ppm))	98	27.365	1.6900	27.618	2.6812	1.1452	11	-0.09	516.53	0
516	Arsenic, total (mg / kg (ppm))	208	28.450	0.30000	27.618	2.6812	1.1452	11	0.31	516.52	0
516	Arsenic, total (mg / kg (ppm))	42	29.000	1.6000	27.618	2.6812	1.1452	11	0.52	516.42	0
516	Arsenic, total (mg / kg (ppm))	964	29.874	2.0117	27.618	2.6812	1.1452	11	0.84	516.43	0
516	Arsenic, total (mg / kg (ppm))	555	31.580	0.26000	27.618	2.6812	1.1452	11	1.48	516.42	0
516	Arsenic, total (mg / kg (ppm))	555	34.000	2.0000	27.618	2.6812	1.1452	11	2.38	516.52	0
518	Cadmium (mg / kg (ppm))	870	0.08580	0.00320	8.6575	1.0008	0.29609	11	-8.56	518.42	0
518	Cadmium (mg / kg (ppm))	42	7.2900	0.44000	8.6575	1.0008	0.29609	11	-1.37	518.32	0
518	Cadmium (mg / kg (ppm))	555	8.0000	0.20000	8.6575	1.0008	0.29609	11	-0.66	518.52	0
518	Cadmium (mg / kg (ppm))	160	8.1700	0.42000	8.6575	1.0008	0.29609	11	-0.49	518.42	0
518	Cadmium (mg / kg (ppm))	33	8.2750	0.13000	8.6575	1.0008	0.29609	11	-0.38	518.53	0
518	Cadmium (mg / kg (ppm))	208	8.6900	0.16000	8.6575	1.0008	0.29609	11	0.03	518.31	0
518	Cadmium (mg / kg (ppm))	555	9.3150	0.73000	8.6575	1.0008	0.29609	11	0.66	518.42	0
518	Cadmium (mg / kg (ppm))	98	9.3550	0.27000	8.6575	1.0008	0.29609	11	0.70	518.53	0
518	Cadmium (mg / kg (ppm))	964	9.6278	0.47380	8.6575	1.0008	0.29609	11	0.97	518.43	0
518	Cadmium (mg / kg (ppm))	563	9.6750	0.03000	8.6575	1.0008	0.29609	11	1.02	518.34	0
518	Cadmium (mg / kg (ppm))	553	9.6800	0.40000	8.6575	1.0008	0.29609	11	1.02	518.53	0
520	Chromium (mg / kg (ppm))	870	0.31060	0.01180	33.028	3.1212	1.7699	12	-10.48	520.42	0
520	Chromium (mg / kg (ppm))	208	27.450	0.90000	33.028	3.1212	1.7699	12	-1.79	520.41	0

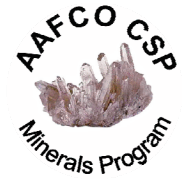
Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCO CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Horwitz SD	R-bar	# Labs			
520	Chromium (mg / kg (ppm))	563	29.220	0.36000	33.028	3.1212	1.7699	12	-1.22	520.31	0
520	Chromium (mg / kg (ppm))	33	31.300	1.8000	33.028	3.1212	1.7699	12	-0.55	520.53	0
520	Chromium (mg / kg (ppm))	510	32.065	0.45000	33.028	3.1212	1.7699	12	-0.31	520.43	0
520	Chromium (mg / kg (ppm))	555	33.000	2.0000	33.028	3.1212	1.7699	12	-0.01	520.52	0
520	Chromium (mg / kg (ppm))	160	34.100	2.6000	33.028	3.1212	1.7699	12	0.34	520.42	0
520	Chromium (mg / kg (ppm))	42	34.500	3.8000	33.028	3.1212	1.7699	12	0.47	520.32	0
520	Chromium (mg / kg (ppm))	227	35.000	4.0000	33.028	3.1212	1.7699	12	0.63	520.31	0
520	Chromium (mg / kg (ppm))	98	35.700	1.2000	33.028	3.1212	1.7699	12	0.86	520.43	0
520	Chromium (mg / kg (ppm))	964	36.992	1.6169	33.028	3.1212	1.7699	12	1.27	520.43	0
520	Chromium (mg / kg (ppm))	553	37.150	2.5000	33.028	3.1212	1.7699	12	1.32	520.53	0
526	Lead (mg / kg (ppm))	870	0.75245	0.02110	86.044	7.0401	3.6827	10	-12.12	526.42	0
526	Lead (mg / kg (ppm))	563	7.4250	0.39000	86.044	7.0401	3.6827	10	-11.17	526.34	0
526	Lead (mg / kg (ppm))	160	80.250	3.9000	86.044	7.0401	3.6827	10	-0.82	526.42	0
526	Lead (mg / kg (ppm))	42	82.800	3.4000	86.044	7.0401	3.6827	10	-0.46	526.32	0
526	Lead (mg / kg (ppm))	33	83.400	10.800	86.044	7.0401	3.6827	10	-0.38	526.53	0
526	Lead (mg / kg (ppm))	98	89.450	0.70000	86.044	7.0401	3.6827	10	0.48	526.53	0
526	Lead (mg / kg (ppm))	964	95.385	0.11570	86.044	7.0401	3.6827	10	1.33	526.43	0
526	Lead (mg / kg (ppm))	553	95.600	10.800	86.044	7.0401	3.6827	10	1.36	526.53	0
526	Lead (mg / kg (ppm))	208	97.050	2.7000	86.044	7.0401	3.6827	10	1.56	526.31	0
526	Lead (mg / kg (ppm))	555	104.00	4.0000	86.044	7.0401	3.6827	10	2.55	526.52	0
529	Mercury (µg / kg (ppb))	553	0.54150	0.05100	241.61	47.862	6.2987	7	-5.04	529.99	0
529	Mercury (µg / kg (ppb))	555	0.73000	0.04000	241.61	47.862	6.2987	7	-5.03	529.99	0
529	Mercury (µg / kg (ppb))	563	65.000	4.0000	241.61	47.862	6.2987	7	-3.69	529.99	0
529	Mercury (µg / kg (ppb))	160	279.50	3.0000	241.61	47.862	6.2987	7	0.79	529.00	0
529	Mercury (µg / kg (ppb))	33	410.50	21.000	241.61	47.862	6.2987	7	3.53	529.99	0
529	Mercury (µg / kg (ppb))	98	455.00	10.000	241.61	47.862	6.2987	7	4.46	529.00	0
529	Mercury (µg / kg (ppb))	208	480.00	6.0000	241.61	47.862	6.2987	7	4.98	529.99	0
539	Nickel (mg / kg (ppm))	870	0.91540	0.03680	107.35	8.4957	7.2971	8	-12.53	539.42	0
539	Nickel (mg / kg (ppm))	42	103.50	3.0000	107.35	8.4957	7.2971	8	-0.45	539.32	0
539	Nickel (mg / kg (ppm))	160	107.00	2.0000	107.35	8.4957	7.2971	8	-0.04	539.42	0
539	Nickel (mg / kg (ppm))	553	107.40	21.200	107.35	8.4957	7.2971	8	0.01	539.53	0
539	Nickel (mg / kg (ppm))	964	107.50	14.140	107.35	8.4957	7.2971	8	0.02	539.43	0
539	Nickel (mg / kg (ppm))	208	108.50	1.0000	107.35	8.4957	7.2971	8	0.14	539.41	0
539	Nickel (mg / kg (ppm))	98	109.50	3.0000	107.35	8.4957	7.2971	8	0.25	539.53	0
539	Nickel (mg / kg (ppm))	555	111.00	14.000	107.35	8.4957	7.2971	8	0.43	539.52	0

Notes: 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 outlier and 8 = Analyst data exempt. Robust statistics not used if < 6 labs reporting, in this case the Z Scores are included for information only (Grey, No Action!). Flag 9 indicates no statistics calculated for this dataset. To review the problem please see all submitted data for this test.



Poultry Layer Feed 201551

Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCO CS	Your	Flag
			Value	Range	Spike AV	Horwitz SD	R-bar	# Labs	Z Score	Method	
529	Mercury (µg / kg (ppb))	0553	0.5415	0.05	510.81	90.406	6.2987	7	-5.64	529.99	0
529	Mercury (µg / kg (ppb))	0555	0.73	0.04	510.81	90.406	6.2987	7	-5.64	529.99	0
529	Mercury (µg / kg (ppb))	0563	65.0	4.0	510.81	90.406	6.2987	7	-4.93	529.99	0
529	Mercury (µg / kg (ppb))	0160	279.5	3.0	510.81	90.406	6.2987	7	-2.56	529.00	0
529	Mercury (µg / kg (ppb))	0033	410.5	21	510.81	90.406	6.2987	7	-1.11	529.99	0
529	Mercury (µg / kg (ppb))	0098	455	10.	510.81	90.406	6.2987	7	-0.62	529.00	0
529	Mercury (µg / kg (ppb))	0208	480	6	510.81	90.406	6.2987	7	-0.34	529.99	0



Rice 201552

Method Group	Analyte Group (Units)	Lab Code	Lab Data		Method Values				AAFCO CS	Your	Flag
			Value	Range	Spike AV	Horwitz SD	R-bar	# Labs	Z Score	Method	
529	Mercury (µg / kg (ppb))	0555	1.7	0.00	2,004.0	288.73	52.740	7	-6.93	529.99	0
529	Mercury (µg / kg (ppb))	0563	664.45	52.7	2,004.0	288.73	52.740	7	-4.64	529.99	0
529	Mercury (µg / kg (ppb))	0033	692.50	81	2,004.0	288.73	52.740	7	-4.54	529.99	0
529	Mercury (µg / kg (ppb))	0227	1,715.0	130.00	2,004.0	288.73	52.740	7	-1.00	529.99	0
529	Mercury (µg / kg (ppb))	0021	1,800.0	0.00	2,004.0	288.73	52.740	7	-0.71	529.99	0
529	Mercury (µg / kg (ppb))	0208	1,830.0	360.00	2,004.0	288.73	52.740	7	-0.60	529.99	1
529	Mercury (µg / kg (ppb))	0098	0.00000	0.00000	2,004.0	288.73	52.740	7	-6.94	529.00	4



As We Move Forward ...

- ❖ I will keep an eye out for problem Analytes and use the Calculated Adjusted Spike instead of the Robust Assigned Value.
- ❖ In some cases the Calculated Adjusted Spike is our best estimate of the true analyte concentration.
- ❖ We will make efforts to obtain more reliable spike calculations.

And tell your friends about our program. We need a lot of participants



Questions?

AAFCO
Check Sample Program