



AAFCO
Association of American Feed Control Officials



Animal Feed Scheme
Cattle Mineral
Test Material Code # 202293

Method Summary Report
(Precision Report Follows)

Labs Reporting: 152
Methods Reported: 310
Issue Date : 04/30/2022

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO #fp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
000.02	Urea, As protein, Colorimetric (%)	1	1	0.1000							
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	34	33	2.358	0.2555	2.374	0.2219	0.0483	9.35%	0.0969	3.51%
001.99	Loss on Drying, Miscellaneous (%)	16	15	2.260	0.5869	2.254	0.3256	0.1051	14.44%	0.0613	3.54%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	3	3	2.396	0.1920	2.396	0.1920	0.1357	8.01%	0.0937	3.51%
001.03	Loss on Drying, Low temp. methods (%)	2	2	2.188	0.1662						
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	43	42	2.372	0.4160	2.423	0.2034	0.0392	8.39%	0.1082	3.50%
002.05	Protein, Crude, Copper, Boric Acid (%)	6	6	2.441	0.1354	2.441	0.1535	0.0783	6.29%	0.1124	3.50%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	2	2	2.515	0.0640						
002.11	Protein, Crude, NIR (%)	2	2	12.98	1.322						
002.00	Protein, Crude, Crude (%)	1	1	2.800							
002.08	Protein, Crude, Cu/Ti (%)	1	1	3.000							
003.14	Fat, Crude, Ankom (%)	16	15	1.248	0.1502	1.242	0.1243	0.0401	10.01%	0.0592	3.87%
003.10	Fat, Crude, Randall, Pet Ether (%)	7	7	0.9487	0.2074	0.9656	0.1947	0.0920	20.17%	0.0960	4.02%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	3	3	1.462	0.5807	1.462	0.5807	0.3352	39.71%	0.0865	3.78%
003.06	Fat, Crude, Pet Ether (%)	3	3	0.8817	0.0549	0.8817	0.0549	0.0317	6.22%	0.0633	4.08%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	2	2	1.305	0.2236						
003.13	Fat, Crude, Randall, Hexane Ext. (%)	2	2	1.538	0.1240						
003.99	Fat, Crude, Miscellaneous (%)	2	2	6.543	7.555						
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	1.387							
003.11	Fat, Crude, NIR (%)	1	1	4.920							
003.12	Fat, Crude, Hexane Ext (%)	1	1	1.195							
004.07	Fiber, Crude, ANKOM (%)	14	13	5.714	2.559	5.199	1.168	0.4050	22.47%	0.2319	3.12%
004.00	Fiber, Crude, Asbestos Free (%)	5	5	4.064	0.5090	4.064	0.5090	0.2276	12.52%	0.1918	3.24%
004.06	Fiber, Crude, Fibertec (%)	2	2	3.604	0.4229						
004.11	Fiber, Crude, NIR (%)	2	2	29.15	13.93						
004.03	Fiber, Crude, Fritted Glass (%)	1	1	3.735							
004.99	Fiber, Crude, Miscellaneous (%)	1	1	3.900							
005.00	Ash, 2h @ 600°C (%)	79	78	72.48	1.531	72.55	1.074	0.1521	1.48%	0.3879	1.17%
005.05	Ash, 3h @ 550°C (%)	19	19	73.07	1.435	73.19	1.057	0.3031	1.44%	0.4027	1.17%

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005.11	Ash, NIR (%)	4	4	47.47	20.85	47.47	20.85	10.43	43.93%	0.9925	1.45%
005.99	Ash, Miscellaneous (%)	5	4	73.91	0.6766	73.91	0.6766	0.3383	0.92%	0.6050	1.16%
005.03	Ash, Microwave furnace (%)	1	1	72.30							
006.00	Total Sugars, As sucrose (%)	1	1	5.030							
006.99	Total Sugars, Miscellaneous (%)	1	1	5.050							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	8	8	5.976	1.724	5.976	1.955	0.8641	32.72%	0.3303	3.06%
008.02	Fiber, Acid Detergent, Crucible (%)	3	3	4.961	0.3059	4.961	0.3059	0.1766	6.17%	0.0940	3.14%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	5.495							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	10	10	13.14	4.547	12.54	3.573	1.412	28.49%	0.3670	2.73%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	2	2	17.25	13.88						
010.99	Moisture, Miscellaneous (%)	14	14	2.360	0.3098	2.360	0.3310	0.1106	14.02%	0.0589	3.51%
010.11	Moisture, NIR (%)	3	3	4.888	2.060	4.888	2.060	1.189	42.14%	0.9700	3.15%
010.03	Moisture, Karl-Fischer (%)	2	2	2.268	0.1450						
011.01	Loss on Drying, HT, 135°C 2hr (%)	47	46	3.508	0.5698	3.596	0.3241	0.0597	9.01%	0.0812	3.30%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	2	2	3.488	0.0672						
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	1	1	4.050							
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	8	7	0.8271	0.4478	0.7346	0.2652	0.1253	36.10%	0.0649	4.19%
012.00	Starch, Polarimetric (Ewers) (%)	2	2	1.060	0.0141						
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	2	2	1.096	0.5923						
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	1	1	0.6500							
012.11	Starch, NIR (%)	1		0.0000							
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	7	7	2.366	0.6840	2.366	0.7757	0.3665	32.78%	0.2704	3.51%
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	5	4	2.008	0.2991	2.008	0.2991	0.1496	14.90%	0.1102	3.60%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	3	3	5.093	1.249	5.093	1.249	0.7212	24.52%	0.4546	3.13%
013.08	Fat, Base Pretreat, Roese-Gottlieb Modified (%)	1	1	1.300							
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	1	1	1.470							
015.43	Aluminum, ICP, Microwave (ppm)	7	7	1,023	123.4	1,029	126.2	59.65	12.27%	62.32	5.63%
015.41	Aluminum, ICP, Dry ash (ppm)	6	6	830.1	95.11	830.1	107.9	55.04	12.99%	31.42	5.82%
015.42	Aluminum, ICP, Open vessel (ppm)	3	3	1,463	752.7	1,463	752.7	434.6	51.46%	30.40	5.34%
015.53	Aluminum, ICP-MS, Microwave (ppm)	3	3	1,064	155.0	1,064	155.0	89.47	14.57%	75.65	5.60%
017.42	Boron, ICP, Open vessel (ppm)	5	5	15.88	11.08	15.88	11.08	4.957	69.80%	1.444	10.55%
017.43	Boron, ICP, Microwave (ppm)	6	5	18.25	6.075	18.25	6.075	3.396	33.28%	0.7256	10.33%
017.41	Boron, ICP, Dry ash (ppm)	4	4	12.17	5.218	12.17	5.218	2.609	42.90%	1.011	10.98%
017.44	Boron, ICP, Dry ash (ppm)	1	1	12.20							
017.52	Boron, ICP-MS, Open vessel (ppm)	1	1	9.211							
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	9.477							
019.43	Calcium, ICP, Microwave (%)	31	31	12.02	0.7581	12.09	0.6164	0.1384	5.10%	0.3511	2.75%
019.42	Calcium, ICP, Open vessel (%)	22	21	12.55	1.081	12.63	0.9062	0.2472	7.17%	0.3700	2.73%
019.31	Calcium, AAS, Dry ash (%)	19	19	12.47	0.4936	12.45	0.5144	0.1475	4.13%	0.1061	2.74%
019.41	Calcium, ICP, Dry ash (%)	19	19	12.13	0.7421	12.13	0.8398	0.2408	6.92%	0.2996	2.75%

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019.08	Calcium, EDTA (%)	6	6	12.73	0.4613	12.73	0.5231	0.2670	4.11%	0.0208	2.73%
019.52	Calcium, ICP-MS, Open vessel (%)	4	4	13.16	1.969	13.16	1.969	0.9845	14.97%	0.2868	2.71%
019.00	Calcium, Ox-Mn04 Vol. (%)	4	3	12.45	0.4250	12.45	0.4250	0.2454	3.41%	0.0517	2.74%
019.53	Calcium, ICP-MS, Microwave (%)	4	3	12.57	0.9262	12.57	0.9262	0.5347	7.37%	0.0616	2.73%
019.99	Calcium, Miscellaneous (%)	3	3	13.23	1.262	13.23	1.262	0.7288	9.54%	0.4733	2.71%
019.09	Calcium, Ion-selective electrode (%)	1	1	11.90							
019.32	Calcium, AAS, Open vessel (%)	1	1	11.70							
019.44	Calcium, ICP, Dry ash (%)	1	1	11.95							
021.43	Cobalt, ICP, Microwave (ppm)	9	8	60.11	11.44	60.11	12.97	5.733	21.58%	1.451	8.64%
021.41	Cobalt, ICP, Dry ash (ppm)	6	5	47.19	5.638	47.19	5.638	3.152	11.95%	0.3508	8.96%
021.52	Cobalt, ICP-MS, Open vessel (ppm)	4	4	43.31	21.80	43.31	21.80	10.90	50.33%	1.755	9.07%
021.53	Cobalt, ICP-MS, Microwave (ppm)	4	4	69.63	17.14	69.63	17.14	8.572	24.62%	5.076	8.45%
021.42	Cobalt, ICP, Open vessel (ppm)	3	3	42.16	4.861	42.16	4.861	2.806	11.53%	5.976	9.11%
021.31	Cobalt, AAS, Dry ash (ppm)	1	1	55.79							
022.43	Copper, ICP, Microwave (ppm)	31	31	1,263	105.3	1,260	104.1	23.38	8.27%	46.44	5.46%
022.42	Copper, ICP, Open vessel (ppm)	22	21	1,273	110.2	1,265	104.1	28.39	8.23%	49.72	5.46%
022.41	Copper, ICP, Dry ash (ppm)	17	16	1,215	81.54	1,217	89.12	27.85	7.33%	27.85	5.49%
022.31	Copper, AAS, Dry ash (ppm)	13	13	1,264	204.9	1,313	105.3	36.49	8.02%	14.26	5.43%
022.52	Copper, ICP-MS, Open vessel (ppm)	4	4	1,309	153.2	1,309	153.2	76.58	11.70%	48.82	5.43%
022.53	Copper, ICP-MS, Microwave (ppm)	4	4	1,267	97.54	1,267	97.54	48.77	7.70%	31.92	5.46%
022.99	Copper, Miscellaneous (ppm)	3	3	1,545	382.6	1,545	382.6	220.9	24.77%	30.33	5.30%
022.33	Copper, AAS, Microwave (ppm)	2	2	1,275	91.16						
022.32	Copper, AAS, Open vessel (ppm)	1	1	1,350							
022.44	Copper, ICP, Dry ash (ppm)	1	1	1,395							
024.53	Iodine, ICP-MS, Microwave (ppm)	2	2	44.96	15.80						
025.43	Iron, ICP, Microwave (ppm)	23	23	6,998	674.3	6,977	516.1	134.5	7.40%	227.9	4.22%
025.42	Iron, ICP, Open vessel (ppm)	20	19	7,033	594.1	7,059	585.8	168.0	8.30%	157.4	4.21%
025.41	Iron, ICP, Dry ash (ppm)	14	14	6,708	870.4	6,838	652.8	218.1	9.55%	186.0	4.24%
025.31	Iron, AAS, Dry ash (ppm)	11	11	5,462	2,355	5,478	2,636	993.7	48.13%	132.2	4.38%
025.53	Iron, ICP-MS, Microwave (ppm)	4	4	7,194	260.9	7,194	260.9	130.4	3.63%	278.3	4.20%
025.99	Iron, Miscellaneous (ppm)	2	2	7,442	210.4						
025.33	Iron, AAS, Microwave (ppm)	1	1	6,919							
025.52	Iron, ICP-MS, Open vessel (ppm)	1	1	7,065							
027.43	Magnesium, ICP, Microwave (%)	29	29	10.86	1.124	11.01	0.7940	0.1843	7.21%	0.3538	2.79%
027.42	Magnesium, ICP, Open vessel (%)	22	21	11.52	0.9069	11.43	0.8194	0.2235	7.17%	0.4388	2.77%
027.41	Magnesium, ICP, Dry ash (%)	17	16	10.54	2.103	10.98	0.7914	0.2473	7.20%	0.2041	2.79%
027.31	Magnesium, AAS, Dry ash (%)	12	12	10.23	2.030	10.66	1.132	0.4085	10.62%	0.3031	2.80%
027.52	Magnesium, ICP-MS, Open vessel (%)	4	4	12.23	1.679	12.23	1.679	0.8396	13.73%	0.5937	2.74%
027.99	Magnesium, Miscellaneous (%)	4	4	10.89	2.988	10.89	2.988	1.494	27.43%	0.2100	2.79%
027.53	Magnesium, ICP-MS, Microwave (%)	4	3	10.93	0.0599	10.93	0.0599	0.0346	0.55%	0.7679	2.79%

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027.32	Magnesium, AAS, Open vessel (%)	1	1	9.305							
027.33	Magnesium, AAS, Microwave (%)	1	1	11.12							
027.44	Magnesium, ICP, Dry ash (%)	1	1	11.40							
028.43	Manganese, ICP, Microwave (ppm)	26	26	1,896	170.4	1,899	165.2	40.50	8.70%	74.55	5.14%
028.42	Manganese, ICP, Open vessel (ppm)	21	21	2,003	188.9	1,988	166.5	45.42	8.38%	71.84	5.10%
028.41	Manganese, ICP, Dry ash (ppm)	13	12	1,802	207.5	1,804	210.1	75.80	11.64%	39.93	5.18%
028.31	Manganese, AAS, Dry ash (ppm)	9	9	1,670	430.4	1,670	488.1	203.4	29.23%	34.04	5.24%
028.53	Manganese, ICP-MS, Microwave (ppm)	5	5	2,116	206.7	2,116	206.7	92.45	9.77%	141.2	5.05%
028.52	Manganese, ICP-MS, Open vessel (ppm)	3	3	2,141	122.3	2,141	122.3	70.59	5.71%	44.58	5.04%
028.33	Manganese, AAS, Microwave (ppm)	1	1	2,016							
028.44	Manganese, ICP, Dry ash (ppm)	1	1	1,945							
028.99	Manganese, Miscellaneous (ppm)	1	1	2,068							
031.43	Phosphorus, ICP, Microwave (%)	29	28	2.718	0.1895	2.713	0.1410	0.0333	5.20%	0.0705	3.44%
031.01	Phosphorus, Photometric (%)	26	25	2.692	0.1854	2.704	0.1791	0.0448	6.62%	0.0503	3.44%
031.42	Phosphorus, ICP, Open vessel (%)	22	21	2.792	0.3164	2.789	0.2118	0.0578	7.59%	0.0834	3.43%
031.41	Phosphorus, ICP, Dry ash (%)	19	19	2.684	0.2364	2.707	0.1743	0.0500	6.44%	0.0953	3.44%
031.53	Phosphorus, ICP-MS, Microwave (%)	4	4	2.880	0.2446	2.880	0.2446	0.1223	8.49%	0.1303	3.41%
031.03	Phosphorus, Autoanalyzer (%)	2	2	2.958	0.1368						
031.99	Phosphorus, Miscellaneous (%)	2	2	2.398	0.3924						
031.06	Phosphorus, Hach Method (%)	1	1	2.370							
031.44	Phosphorus, ICP, Dry ash (%)	1	1	2.570							
031.52	Phosphorus, ICP-MS, Open vessel (%)	1	1	2.890							
032.43	Potassium, ICP, Microwave (%)	19	19	0.7347	0.0929	0.7283	0.0905	0.0260	12.43%	0.0274	4.20%
032.42	Potassium, ICP, Open vessel (%)	18	17	0.7458	0.0923	0.7389	0.0891	0.0270	12.05%	0.0236	4.19%
032.41	Potassium, ICP, Dry ash (%)	13	13	0.7354	0.0807	0.7200	0.0549	0.0190	7.63%	0.0348	4.20%
032.31	Potassium, AAS, Dry ash (%)	6	6	1.067	0.9040	0.7256	0.0911	0.0465	12.55%	0.0288	4.20%
032.53	Potassium, ICP-MS, Microwave (%)	3	3	0.6113	0.0887	0.6113	0.0887	0.0512	14.50%	0.0772	4.31%
032.52	Potassium, ICP-MS, Open vessel (%)	2	2	0.6440	0.0198						
032.99	Potassium, Miscellaneous (%)	2	2	0.7800	0.1202						
032.02	Potassium, Flame Emission (%)	1	1	1.430							
032.32	Potassium, AAS, Open vessel (%)	1	1	0.5800							
032.44	Potassium, ICP, Dry ash (%)	1	1	0.6120							
033.01	Salt as chloride, Poten Cl (%)	24	22	17.24	0.7088	17.22	0.5605	0.1494	3.25%	0.4133	2.41%
033.00	Salt as chloride, Sol Cl (%)	14	13	16.09	4.173	17.09	1.072	0.3716	6.27%	0.2773	2.42%
033.99	Salt, Miscellaneous (%)	8	8	16.46	2.144	16.90	1.052	0.4648	6.22%	0.2860	2.43%
033.03	Salt as chloride, Quantab (%)	5	4	19.33	2.267	19.33	2.267	1.309	11.73%	0.0025	2.27%
033.05	Salt as chloride, Ion Sel Electrode (%)	2	2	16.85	0.5056						
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	11	11	23.03	3.737	23.02	4.226	1.593	18.36%	1.524	9.98%
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	9	8	21.84	2.196	21.84	2.490	1.100	11.40%	0.3196	10.06%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	4	4	15.42	10.30	15.42	10.30	5.149	66.77%	0.6030	10.60%

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034.41	Selenium, Total (Se), ICP, Dry ash (ppm)	4	4	12.80	8.778	12.80	8.778	4.389	68.58%	0.7875	10.90%
034.42	Selenium, Total (Se), ICP, Open vessel (ppm)	4	3	24.45	11.68	24.45	11.68	6.745	47.78%	0.6033	9.89%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	4	3	19.75	1.536	19.75	1.536	0.8866	7.78%	0.2258	10.21%
034.01	Selenium, Total (Se), Fluor (ppm)	1	1	22.00							
034.99	Selenium, Total (Se), Miscellaneous (ppm)	1	1	11.95							
035.43	Sodium, ICP, Microwave (%)	23	22	6.341	0.7997	6.505	0.4076	0.1086	6.27%	0.1618	3.02%
035.42	Sodium, ICP, Open vessel (%)	20	20	6.598	0.5741	6.558	0.4592	0.1283	7.00%	0.1269	3.01%
035.41	Sodium, ICP, Dry ash (%)	15	14	6.449	0.2996	6.423	0.2173	0.0726	3.38%	0.1817	3.02%
035.31	Sodium, AAS, Dry ash (%)	10	10	6.023	1.811	6.382	0.5440	0.2150	8.52%	0.0712	3.03%
035.53	Sodium, ICP-MS, Microwave (%)	4	4	6.345	0.6290	6.345	0.6290	0.3145	9.91%	0.0762	3.03%
035.52	Sodium, ICP-MS, Open vessel (%)	2	2	6.672	0.1093						
035.99	Sodium, Miscellaneous (%)	2	2	3.655	3.981						
035.01	Sodium, Ion-selective electrode (%)	1	1	6.568							
035.02	Sodium, Em Spect (%)	1	1	6.535							
035.32	Sodium, AAS, Open vessel (%)	1	1	5.395							
036.42	Sulfur, ICP, Open vessel (%)	22	22	0.5526	0.0717	0.5502	0.0640	0.0170	11.62%	0.0239	4.38%
036.43	Sulfur, ICP, Microwave (%)	18	17	0.6094	0.1282	0.5836	0.0588	0.0178	10.08%	0.0125	4.34%
036.52	Sulfur, ICP-MS, Open vessel (%)	2	2	2,651	3,749						
036.53	Sulfur, ICP-MS, Microwave (%)	2	2	0.5738	0.1036						
036.04	Sulfur, LECO (%)	1	1	0.4250							
036.99	Sulfur, Miscellaneous (%)	1	1	0.4650							
037.43	Zinc, ICP, Microwave (ppm)	30	30	2,428	235.2	2,430	222.7	50.82	9.16%	69.55	4.95%
037.42	Zinc, ICP, Open vessel (ppm)	22	21	2,439	272.9	2,453	253.3	69.09	10.32%	62.39	4.94%
037.41	Zinc, ICP, Dry ash (ppm)	18	17	2,281	243.7	2,293	246.5	74.74	10.75%	58.59	4.99%
037.31	Zinc, AAS, Dry ash (ppm)	14	13	2,521	620.2	2,486	187.0	64.82	7.52%	42.62	4.93%
037.99	Zinc, Miscellaneous (ppm)	4	4	2,293	97.07	2,293	97.07	48.53	4.23%	25.56	4.99%
037.52	Zinc, ICP-MS, Open vessel (ppm)	4	3	2,585	33.31	2,585	33.31	19.23	1.29%	35.88	4.90%
037.53	Zinc, ICP-MS, Microwave (ppm)	4	3	2,612	142.1	2,612	142.1	82.04	5.44%	69.67	4.90%
037.33	Zinc, AAS, Microwave (ppm)	2	2	2,580	98.24						
037.32	Zinc, AAS, Open vessel (ppm)	1	1	2,520							
037.44	Zinc, ICP, Dry ash (ppm)	1	1	2,465							
038.43	Molybdenum, ICP, Microwave (ppm)	7	7	8.152	2.293	8.152	2.600	1.228	31.89%	0.8654	11.66%
038.41	Molybdenum, ICP, Dry ash (ppm)	4	4	7.287	0.1141	7.287	0.1141	0.0571	1.57%	0.1051	11.86%
038.42	Molybdenum, ICP, Open vessel (ppm)	5	4	7.256	1.790	7.256	1.790	0.8949	24.66%	0.4478	11.87%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	5	4	9.538	0.1369	9.538	0.1369	0.0685	1.44%	0.6851	11.39%
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	2	2	9.469	1.104						
040.53	Barium, ICP-MS, Microwave (ppm)	2	2	18.99	0.5236						
040.52	Barium, ICP-MS, Open vessel (ppm)	1	1	22.74							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	14.22							
042.00	Chloride, Titrimetric (%)	4	4	10.36	0.4629	10.36	0.4629	0.2314	4.47%	0.3220	2.81%

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
042.02	Chloride, Ion Chromatography (%)	1	1	10.22							
042.99	Chloride, Miscellaneous (%)	1	1	10.57							
095.01	Methoprene, LC (UV or FL) (ppm)	1	1	16.00							
095.99	Methoprene, Miscellaneous (ppm)	1	1	27.76							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	131.5							
102.01	Niacin, Microbiological (ppm)	1	1	6.910							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	4.230							
105.01	Thiamine, Fluorometer (ppm)	1	1	0.1775							
106.02	Vitamin A, LC (KU / kg)	18	18	204.2	33.75	203.3	36.48	10.75	17.94%	14.90	
106.00	Vitamin A, Color (KU / kg)	2	2	230.8	70.36						
106.01	Vitamin A, UV (KU / kg)	1	1	247.5							
106.99	Vitamin A, Miscellaneous (KU / kg)	1	1	281.5							
107.00	Vitamin B12, Microbiological (ppb)	1		4.400							
108.02	Vitamin D3, LC (KU / kg)	7	7	19.13	4.430	18.74	4.085	1.930	21.80%	4.455	
108.99	Vitamin D3, Miscellaneous (KU / kg)	1	1	19.85							
109.02	Vitamin E, LC (IU / kg)	15	15	320.8	232.4	273.7	70.71	22.82	25.83%	15.22	
109.99	Vitamin E, Miscellaneous (IU / kg)	2	2	237.3	82.38						
111.00	Vitamin C, Phosphorylated, LC (ppm)	1		4.400							
112.01	Pyridoxine, LC (µg / g)	1	1	0.6600							
113.01	Folic Acid, Micro (ppm)	1	1	0.1490							
114.01	Biotin, Microbiological (ppm)	1	1	0.2215							
120.00	Alanine, Post-col Ninhydrin Der (%)	3	3	0.0856	0.0037	0.0856	0.0037	0.0021	4.29%	0.0034	5.79%
120.05	Alanine, Pre-col AQC Der (%)	2	2	0.0953	0.0004						
120.99	Alanine, Miscellaneous (%)	1	1	0.1000							
121.00	Arginine, Post-col Ninhydrin Der (%)	3	3	0.0711	0.0016	0.0711	0.0016	0.0009	2.25%	0.0011	5.95%
121.05	Arginine, Pre-col AQC Der (%)	2	2	0.0855	0.0064						
121.99	Arginine, Miscellaneous (%)	1	1	0.0800							
122.00	Aspartic, Post-col Ninhydrin Der (%)	3	3	0.2316	0.0218	0.2316	0.0218	0.0126	9.41%	0.0041	4.98%
122.05	Aspartic, Pre-col AQC Der (%)	2	2	0.2653	0.0004						
122.99	Aspartic, Miscellaneous (%)	1	1	0.2900							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	3	3	0.0422	0.0186	0.0422	0.0186	0.0108	44.10%	0.0033	6.44%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	2	1	0.0186							
124.99	Cysteine/Cystine, Miscellaneous (%)	1	1	0.0200							
125.00	Glutamic, Post-col Ninhydrin Der (%)	3	3	0.2439	0.0054	0.2439	0.0054	0.0031	2.21%	0.0092	4.95%
125.05	Glutamic, Pre-col AQC Der (%)	2	2	0.2545	0.0078						
125.99	Glutamic, Miscellaneous (%)	1	1	0.2750							
126.00	Glycine, Post-col Ninhydrin Der (%)	3	3	0.1198	0.0086	0.1198	0.0086	0.0050	7.16%	0.0025	5.50%
126.05	Glycine, Pre-col AQC Der (%)	2	2	0.1303	0.0004						
126.99	Glycine, Miscellaneous (%)	1	1	0.1300							
127.00	Histidine, Post-col Ninhydrin Der (%)	3	3	0.0281	0.0166	0.0281	0.0166	0.0096	58.90%	0.0009	6.85%

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127.05	Histidine, Pre-col AQC Der (%)	2	1	0.0335							
127.99	Histidine, Miscellaneous (%)	1	1	0.0400							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	3	3	0.0644	0.0004	0.0644	0.0004	0.0002	0.56%	0.0032	6.04%
128.05	Isoleucine, Pre-col AQC Der (%)	2	2	0.0718	0.0025						
128.99	Isoleucine, Miscellaneous (%)	1	1	0.0700							
129.00	Leucine, Post-col Ninhydrin Der (%)	3	3	0.1058	0.0113	0.1058	0.0113	0.0065	10.65%	0.0068	5.61%
129.05	Leucine, Pre-col AQC Der (%)	2	2	0.1005	0.0007						
129.99	Leucine, Miscellaneous (%)	1	1	0.1100							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	3	3	0.0780	0.0088	0.0780	0.0088	0.0051	11.23%	0.0015	5.87%
130.05	L-Lysine, Pre-col AQC Der (%)	2	2	0.0780	0.0028						
130.99	L-Lysine, Miscellaneous (%)	1	1	0.0900							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	3	3	0.0219	0.0142	0.0219	0.0142	0.0082	65.03%	0.0023	7.11%
131.05	Methionine, PAO Pre-col AQC Der (%)	2	2	0.0150	0.0071						
131.99	Methionine, Miscellaneous (%)	1	1	0.0100							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	3	3	0.0641	0.0205	0.0641	0.0205	0.0118	31.98%	0.0015	6.05%
132.05	Phenylalanine, Pre-col AQC Der (%)	2	2	0.0653	0.0138						
132.99	Phenylalanine, Miscellaneous (%)	1	1	0.0600							
133.00	Proline, Post-col Ninhydrin Der (%)	3	3	0.0792	0.0090	0.0792	0.0090	0.0052	11.34%	0.0020	5.86%
133.05	Proline, Pre-col AQC Der (%)	2	2	0.0940	0.0085						
133.99	Proline, Miscellaneous (%)	1	1	0.0500							
134.00	Serine, Post-col Ninhydrin Der (%)	3	3	0.0833	0.0014	0.0833	0.0014	0.0008	1.63%	0.0025	5.81%
134.05	Serine, Pre-col AQC Der (%)	2	2	0.0895	0.0219						
134.99	Serine, Miscellaneous (%)	1	1	0.0950							
135.00	Threonine, Post-col Ninhydrin Der (%)	3	3	0.0584	0.0024	0.0584	0.0024	0.0014	4.02%	0.0019	6.13%
135.05	Threonine, Pre-col AQC Der (%)	2	2	0.0610	0.0127						
135.99	Threonine, Miscellaneous (%)	1	1	0.0700							
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	1	1	0.0200							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	2	1	0.0170							
136.05	Tryptophan, Pre-col AQC Der (%)	2	1	0.0235							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	3	3	0.0803	0.0094	0.0803	0.0094	0.0054	11.69%	0.0031	5.85%
137.05	Tyrosine, Pre-col AQC Der (%)	2	2	0.0610	0.0057						
137.99	Tyrosine, Miscellaneous (%)	1	1	0.0650							
138.00	Valine, Post-col Ninhydrin Der (%)	3	3	0.0856	0.0064	0.0856	0.0064	0.0037	7.44%	0.0021	5.79%
138.05	Valine, Pre-col AQC Der (%)	2	2	0.0838	0.0124						
138.99	Valine, Miscellaneous (%)	1	1	0.1100							
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0100							
139.99	Taurine, Miscellaneous (%)	1	1	0.0100							
160.99	Fructose, Miscellaneous (%)	1	1	0.5600							
160.10	Fructose, HPAEC PAD (%)	1	1	0.0000							
161.10	Galactose, HPAEC PAD (%)	1	1	0.0000							

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162.10	Glucose, HPAEC PAD (%)	1	1	0.1300							
162.99	Glucose, Miscellaneous (%)	1		0.1500							
163.10	Lactose, HPAEC PAD (%)	1		0.0000							
163.99	Lactose, Miscellaneous (%)	1		0.1500							
164.10	Maltose, HPAEC PAD (%)	1		0.0000							
164.99	Maltose, Miscellaneous (%)	1		0.1500							
165.10	Sucrose, HPAEC PAD (%)	1	1	2.730							
165.99	Sucrose, Miscellaneous (%)	1	1	3.715							
166.10	Raffinose, HPAEC PAD (%)	1		0.0000							
166.99	Raffinose, Miscellaneous (%)	1		0.0500							
167.99	Stachyose, Miscellaneous (%)	1	1	0.0700							
167.10	Stachyose, HPAEC PAD (%)	1		0.0000							
400.01	Water Activity, Aqualab chilled mirror (Units)	7	7	0.3761	0.0481	0.3696	0.0387	0.0183	10.46%	0.0048	
400.99	Water Activity, Miscellaneous (Units)	1	1	0.3545							
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	5	4	1.686	0.1913	1.686	0.1913	0.0956	11.35%	0.1204	14.79%
516.52	Arsenic, Total (As), ICP-MS, Open vessel (ppm)	2	2	1.534	0.0407						
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1	1	30.95							
518.43	Cadmium, ICP, Microwave (ppm)	4	3	7.081	10.99	7.081	10.99	7.769	155.17%	0.2548	11.92%
518.53	Cadmium, ICP-MS, Microwave (ppm)	4	3	0.7053	0.0910	0.7053	0.0910	0.0525	12.90%	0.0333	16.86%
518.41	Cadmium, ICP, Dry ash (ppm)	2	2	0.5650	0.0523						
518.52	Cadmium, ICP-MS, Open vessel (ppm)	2	2	0.7143	0.0336						
518.33	Cadmium, AAS, Microwave (ppm)	1	1	0.7316							
518.42	Cadmium, ICP, Open vessel (ppm)	1	1	0.6875							
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	5	5	67.03	38.43	67.03	38.43	17.19	57.33%	1.983	8.50%
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	4	4	93.84	14.65	93.84	14.65	7.327	15.61%	8.158	8.08%
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	3	3	77.26	22.20	77.26	22.20	12.81	28.73%	8.204	8.32%
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	2	2	58.89	0.1566						
520.52	Chromium, Total (Cr), ICP-MS, Open vessel (ppm)	2	2	77.34	19.88						
520.31	Chromium, Total (Cr), AAS, Dry ash (ppm)	1	1	81.25							
526.53	Lead, ICP-MS, Microwave (ppm)	5	5	1.116	0.1295	1.116	0.1295	0.0579	11.60%	0.0801	15.73%
526.41	Lead, ICP, Dry ash (ppm)	2	2	0.9824	0.4934						
526.43	Lead, ICP, Microwave (ppm)	2	2	6.673	7.577						
526.52	Lead, ICP-MS, Open vessel (ppm)	2	2	1.061	0.0688						
526.33	Lead, AAS, Microwave (ppm)	1	1	1.301							
526.42	Lead, ICP, Open vessel (ppm)	1	1	8.135							
529.99	Mercury, Miscellaneous (ppb)	5	3	27.45	38.31	27.45	38.31	22.12	139.57%	5.847	22.00%
539.43	Nickel, ICP, Microwave (ppm)	3	3	35.07	10.48	35.07	10.48	6.052	29.90%	0.8857	9.37%
539.53	Nickel, ICP-MS, Microwave (ppm)	3	3	38.55	4.926	38.55	4.926	2.844	12.78%	2.623	9.23%
539.41	Nickel, ICP, Dry ash (ppm)	2	2	26.47	0.4558						
539.52	Nickel, ICP-MS, Open vessel (ppm)	2	2	34.20	5.727						

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539.42	Nickel, ICP, Open vessel (ppm)	1	1	27.55							

Notes: Robust statistics not used if < 6 labs reporting. In this case Means and SD's may be reported based on Raw Data with obvious blunders removed. Robust Assigned Values indicated in bold font.



Animal Feed Scheme

Cattle Mineral

Test Material Code # 202293

Method Precision Report

Methods Reported: 74

Labs Reporting: 152

Issue Date : 04/30/2022

Method Code	Analyte and Method	Total # Labs Submitting	# Labs used in Precision Calcs	Precision Mean	Precision SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	34	31	2.358	0.2555	0.1930	0.0866	0.2116	8.13%	3.65%	8.91%	2.443
001.99	Loss on Drying, Miscellaneous (%)	16	15	2.260	0.5869	0.5856	0.0535	0.5881	25.92%	2.37%	26.03%	10.99
002.05	Protein, Crude, Copper, Boric Acid (%)	6	6	2.441	0.1354	0.1162	0.0983	0.1521	4.76%	4.02%	6.23%	1.548
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	43	41	2.372	0.4160	0.2651	0.1095	0.2868	10.95%	4.52%	11.85%	2.619
003.10	Fat, Crude, Randall, Pet Ether (%)	7	7	0.9487	0.2074	0.1967	0.0931	0.2176	20.74%	9.82%	22.94%	2.337
003.14	Fat, Crude, Ankom (%)	16	13	1.248	0.1502	0.1134	0.0420	0.1209	9.33%	3.45%	9.95%	2.882
004.00	Fiber, Crude, Asbestos Free (%)	5	5	4.064	0.5090	0.4905	0.1920	0.5267	12.07%	4.73%	12.96%	2.743
004.07	Fiber, Crude, ANKOM (%)	14	12	5.714	2.559	0.9219	0.2103	0.9456	18.26%	4.17%	18.73%	4.496
005.00	Ash, 2h @ 600°C (%)	79	73	72.48	1.531	0.9394	0.3545	1.004	1.29%	0.49%	1.38%	2.832
005.05	Ash, 3h @ 550°C (%)	19	18	73.07	1.435	0.9229	0.3665	0.9930	1.26%	0.50%	1.35%	2.710
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	8	8	5.976	1.724	1.710	0.3167	1.739	28.61%	5.30%	29.10%	5.490
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	10	9	13.14	4.547	2.669	0.3240	2.689	22.35%	2.71%	22.51%	8.300
010.99	Moisture, Miscellaneous (%)	14	14	2.360	0.3098	0.3073	0.0558	0.3123	13.02%	2.37%	13.23%	5.593
011.01	Loss on Drying, HT, 135°C 2hr (%)	47	42	3.508	0.5698	0.3758	0.0679	0.3819	10.42%	1.88%	10.59%	5.622
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	8	5	0.8271	0.4478	0.1797	0.0343	0.1829	26.10%	4.98%	26.57%	5.338
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	7	7	2.366	0.6840	0.6657	0.2227	0.7019	28.13%	9.41%	29.66%	3.152
015.41	Aluminum, ICP, Dry ash (ppm)	6	5	830.1	95.11	100.7	14.32	101.7	11.96%	1.70%	12.08%	7.103
015.43	Aluminum, ICP, Microwave (ppm)	7	7	1,023	123.4	117.5	53.09	129.0	11.49%	5.19%	12.61%	2.429
017.42	Boron, ICP, Open vessel (ppm)	5	5	15.88	11.08	11.06	1.122	11.11	69.62%	7.07%	69.98%	9.903
017.43	Boron, ICP, Microwave (ppm)	6	5	18.25	6.075	6.063	0.5431	6.088	33.22%	2.98%	33.35%	11.21
019.08	Calcium, EDTA (%)	6	6	12.73	0.4613	0.4611	0.0222	0.4616	3.62%	0.17%	3.63%	20.83
019.31	Calcium, AAS, Dry ash (%)	19	18	12.47	0.4936	0.4261	0.0993	0.4375	3.43%	0.80%	3.52%	4.405
019.41	Calcium, ICP, Dry ash (%)	19	18	12.13	0.7421	0.6724	0.2496	0.7172	5.51%	2.05%	5.88%	2.874
019.42	Calcium, ICP, Open vessel (%)	22	20	12.55	1.081	0.7984	0.3402	0.8678	6.29%	2.68%	6.83%	2.551
019.43	Calcium, ICP, Microwave (%)	31	28	12.02	0.7581	0.4469	0.2861	0.5306	3.66%	2.34%	4.35%	1.855
021.41	Cobalt, ICP, Dry ash (ppm)	6	5	47.19	5.638	5.634	0.3064	5.642	11.94%	0.65%	11.96%	18.42
021.43	Cobalt, ICP, Microwave (ppm)	9	8	60.11	11.44	11.40	1.392	11.48	18.96%	2.32%	19.10%	8.248
022.31	Copper, AAS, Dry ash (ppm)	13	11	1,264	204.9	124.7	9.503	125.1	9.59%	0.73%	9.62%	13.16
022.41	Copper, ICP, Dry ash (ppm)	17	15	1,215	81.54	81.60	20.83	84.22	6.69%	1.71%	6.91%	4.043
022.42	Copper, ICP, Open vessel (ppm)	22	20	1,273	110.2	108.6	43.29	117.0	8.54%	3.40%	9.19%	2.701
022.43	Copper, ICP, Microwave (ppm)	31	31	1,263	105.3	100.2	45.76	110.2	7.94%	3.62%	8.73%	2.407
025.31	Iron, AAS, Dry ash (ppm)	11	11	5,462	2,355	2,353	128.6	2,357	43.08%	2.35%	43.14%	18.33
025.41	Iron, ICP, Dry ash (ppm)	14	13	6,708	870.4	646.2	179.0	670.5	9.41%	2.61%	9.76%	3.746
025.42	Iron, ICP, Open vessel (ppm)	20	19	7,033	594.1	586.4	134.7	601.6	8.34%	1.91%	8.55%	4.467
025.43	Iron, ICP, Microwave (ppm)	23	21	6,998	674.3	506.7	204.0	546.2	7.36%	2.96%	7.93%	2.678
027.31	Magnesium, AAS, Dry ash (%)	12	11	10.23	2.030	1.035	0.2740	1.070	9.63%	2.55%	9.96%	3.907

Method Code	Analyte and Method	Total # Labs Submitting	# Labs used in Precision Calcs	Precision Mean	Precision SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
027.41	Magnesium, ICP, Dry ash (%)	17	15	10.54	2.103	0.6973	0.1664	0.7169	6.32%	1.51%	6.50%	4.309
027.42	Magnesium, ICP, Open vessel (%)	22	19	11.52	0.9069	0.6629	0.3220	0.7370	5.85%	2.84%	6.50%	2.288
027.43	Magnesium, ICP, Microwave (%)	29	28	10.86	1.124	0.9638	0.3382	1.021	8.79%	3.08%	9.32%	3.020
028.31	Manganese, AAS, Dry ash (ppm)	9	9	1,670	430.4	429.9	30.29	430.9	25.75%	1.81%	25.81%	14.23
028.41	Manganese, ICP, Dry ash (ppm)	13	12	1,802	207.5	205.4	42.25	209.7	11.40%	2.34%	11.64%	4.963
028.42	Manganese, ICP, Open vessel (ppm)	21	20	2,003	188.9	136.6	72.40	154.6	6.91%	3.66%	7.83%	2.136
028.43	Manganese, ICP, Microwave (ppm)	26	25	1,896	170.4	151.4	66.62	165.4	7.92%	3.49%	8.66%	2.482
028.53	Manganese, ICP-MS, Microwave (ppm)	5	5	2,116	206.7	179.6	144.9	230.7	8.49%	6.85%	10.90%	1.593
031.01	Phosphorus, Photometric (%)	26	23	2.692	0.1854	0.1625	0.0400	0.1674	5.98%	1.47%	6.16%	4.186
031.41	Phosphorus, ICP, Dry ash (%)	19	19	2.684	0.2364	0.2259	0.0984	0.2464	8.42%	3.67%	9.18%	2.504
031.42	Phosphorus, ICP, Open vessel (%)	22	18	2.792	0.3164	0.1706	0.0662	0.1830	6.14%	2.38%	6.58%	2.766
031.43	Phosphorus, ICP, Microwave (%)	29	26	2.718	0.1895	0.1377	0.0600	0.1502	5.06%	2.21%	5.52%	2.502
032.31	Potassium, AAS, Dry ash (%)	6	5	1.067	0.9040	0.0483	0.0160	0.0509	6.92%	2.29%	7.29%	3.182
032.41	Potassium, ICP, Dry ash (%)	13	13	0.7354	0.0807	0.0779	0.0299	0.0834	10.59%	4.06%	11.35%	2.792
032.42	Potassium, ICP, Open vessel (%)	18	16	0.7458	0.0923	0.0942	0.0172	0.0957	12.66%	2.31%	12.87%	5.570
032.43	Potassium, ICP, Microwave (%)	19	19	0.7347	0.0929	0.0909	0.0275	0.0949	12.37%	3.74%	12.92%	3.457
033.00	Salt as chloride, Sol Cl (%)	14	12	16.09	4.173	0.8290	0.2558	0.8676	4.81%	1.48%	5.04%	3.391
033.01	Salt as chloride, Poten Cl (%)	24	21	17.24	0.7088	0.5208	0.4076	0.6614	3.01%	2.35%	3.82%	1.623
033.99	Salt, Miscellaneous (%)	8	7	16.46	2.144	0.8117	0.2642	0.8536	4.73%	1.54%	4.97%	3.231
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	9	8	21.84	2.196	2.183	0.3312	2.208	10.00%	1.52%	10.11%	6.668
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	11	11	23.03	3.737	3.610	1.366	3.860	15.68%	5.93%	16.76%	2.825
035.31	Sodium, AAS, Dry ash (%)	10	9	6.023	1.811	0.6241	0.0706	0.6281	9.51%	1.08%	9.57%	8.899
035.41	Sodium, ICP, Dry ash (%)	15	13	6.449	0.2996	0.1490	0.1828	0.2358	2.33%	2.86%	3.69%	1.290
035.42	Sodium, ICP, Open vessel (%)	20	18	6.598	0.5741	0.4197	0.1107	0.4340	6.44%	1.70%	6.66%	3.921
035.43	Sodium, ICP, Microwave (%)	23	19	6.341	0.7997	0.4970	0.1065	0.5083	7.69%	1.65%	7.86%	4.772
036.42	Sulfur, ICP, Open vessel (%)	22	21	0.5526	0.0717	0.0677	0.0204	0.0707	12.37%	3.73%	12.92%	3.462
036.43	Sulfur, ICP, Microwave (%)	18	16	0.6094	0.1282	0.0581	0.0130	0.0595	9.99%	2.24%	10.23%	4.568
037.31	Zinc, AAS, Dry ash (ppm)	14	12	2,521	620.2	369.0	29.54	370.2	15.51%	1.24%	15.55%	12.53
037.41	Zinc, ICP, Dry ash (ppm)	18	16	2,281	243.7	242.1	44.47	246.1	10.55%	1.94%	10.72%	5.534
037.42	Zinc, ICP, Open vessel (ppm)	22	19	2,439	272.9	220.6	52.27	226.7	8.92%	2.11%	9.17%	4.338
037.43	Zinc, ICP, Microwave (ppm)	30	28	2,428	235.2	208.8	63.60	218.3	8.53%	2.60%	8.92%	3.432
038.43	Molybdenum, ICP, Microwave (ppm)	7	6	8.152	2.293	2.148	0.4513	2.195	25.01%	5.26%	25.56%	4.863
106.02	Vitamin A, LC (KU / kg)	18	17	204.2	33.75	33.67	12.00	35.74	16.53%	5.89%	17.55%	2.978
108.02	Vitamin D3, LC (KU / kg)	7	6	19.13	4.430	2.031	2.318	3.081	11.46%	13.08%	17.39%	1.330
109.02	Vitamin E, LC (IU / kg)	15	14	320.8	232.4	63.83	12.42	65.03	24.27%	4.72%	24.73%	5.234
400.01	Water Activity, Aqualab chilled mirror (Units)	7	6	0.3761	0.0481	0.0246	0.0023	0.0248	6.85%	0.64%	6.88%	10.80
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	5	5	67.03	38.43	38.40	2.104	38.46	57.29%	3.14%	57.37%	18.28
526.53	Lead, ICP-MS, Microwave (ppm)	5	5	1.116	0.1295	0.1190	0.0724	0.1393	10.66%	6.49%	12.48%	1.923

Notes: Precision Calculations provided for methods with 5 or more labs contributing to calculations.