



AAFCO
Association of American Feed Control Officials



Animal Feed Scheme
Poultry Feed
Test Material Code # 202421

Method Summary Report
(Precision Report Follows)

Labs Reporting: 155
Methods Reported: 344
Issue Date : 02/29/2024

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 (Rob R-bar)	Thompson Horwitz %RSD
000.02	Urea, As protein, Colorimetric (%)	1	1	3.950							
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	39	38	8.127	0.4458	8.183	0.2799	0.0568	3.42%	0.1266	2.91%
001.99	Loss on Drying, Miscellaneous (%)	16	16	7.999	0.4397	8.017	0.4551	0.1422	5.68%	0.0784	2.92%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	4	4	8.212	0.1209	8.212	0.1209	0.0605	1.47%	0.0215	2.91%
001.03	Loss on Drying, Low temp. methods (%)	3	3	8.240	0.0482	8.240	0.0482	0.0278	0.59%	0.2000	2.91%
001.05	Loss on Drying, LECO (%)	1	1	8.116							
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	110	108	17.91	0.3535	17.90	0.2521	0.0303	1.41%	0.1434	2.36%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	17	17	17.76	0.1928	17.74	0.1750	0.0530	0.99%	0.1185	2.37%
002.05	Protein, Crude, Copper, Boric Acid (%)	18	17	17.67	0.2424	17.67	0.2488	0.0754	1.41%	0.0982	2.38%
002.11	Protein, Crude, NIR (%)	9	9	21.98	4.744	21.32	3.656	1.523	17.15%	0.2100	2.17%
002.00	Protein, Crude, Crude (%)	3	3	18.46	0.9627	18.46	0.9627	0.5558	5.21%	0.2500	2.33%
002.04	Protein, Crude, Copper Catalyst (%)	2	2	17.84	0.0132						
002.99	Protein, Crude, Miscellaneous (%)	2	2	17.80	0.2192						
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	1	1	17.69							
002.08	Protein, Crude, Cu/Ti (%)	1	1	17.94							
003.14	Fat, Crude, Ankom (%)	51	50	2.731	0.2062	2.728	0.2154	0.0381	7.90%	0.1041	3.44%
003.10	Fat, Crude, Randall, Pet Ether (%)	24	23	2.724	0.1832	2.723	0.2065	0.0538	7.58%	0.0789	3.44%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	12	12	2.823	0.2578	2.835	0.2548	0.0920	8.99%	0.1269	3.42%
003.06	Fat, Crude, Pet Ether (%)	13	12	2.769	0.2705	2.760	0.2856	0.1031	10.35%	0.0490	3.43%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	11	10	2.946	0.1374	2.937	0.1336	0.0528	4.55%	0.0484	3.40%
003.11	Fat, Crude, NIR (%)	9	8	4.488	3.225	4.445	3.561	1.574	80.13%	0.2506	3.20%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	5	5	2.721	0.1722	2.721	0.1722	0.0770	6.33%	0.1095	3.44%
003.12	Fat, Crude, Hexane Ext (%)	4	3	2.538	0.1828	2.538	0.1828	0.1055	7.20%	0.0767	3.48%
003.99	Fat, Crude, Miscellaneous (%)	3	3	4.080	2.658	4.080	2.658	1.879	65.14%	0.2067	3.24%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	2.815							
004.07	Fiber, Crude, ANKOM (%)	72	71	5.236	1.519	4.947	0.9736	0.1444	19.68%	0.1966	3.14%
004.06	Fiber, Crude, Fibertec (%)	16	15	4.555	0.4551	4.514	0.3996	0.1290	8.85%	0.1264	3.19%
004.00	Fiber, Crude, Asbestos Free (%)	8	8	5.351	1.603	4.932	0.6112	0.2701	12.39%	0.2361	3.15%
004.11	Fiber, Crude, NIR (%)	8	8	5.848	2.623	5.848	2.974	1.314	50.85%	0.1380	3.07%

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004.03	Fiber, Crude, Fritted Glass (%)	4	4	5.109	1.173	5.109	1.173	0.5866	22.96%	0.1275	3.13%
004.99	Fiber, Crude, Miscellaneous (%)	1	1	5.195							
005.00	Ash, 2h @ 600°C (%)	86	84	11.49	0.7676	11.63	0.4757	0.0649	4.09%	0.0965	2.76%
005.05	Ash, 3h @ 550°C (%)	23	22	11.99	0.5773	12.07	0.3084	0.0822	2.56%	0.0950	2.75%
005.11	Ash, NIR (%)	10	9	8.978	3.726	8.978	4.225	1.760	47.06%	0.1571	2.87%
005.99	Ash, Miscellaneous (%)	9	8	11.86	0.5451	11.94	0.4056	0.1793	3.40%	0.1702	2.75%
005.02	Ash, LECO (%)	1	1	11.71							
005.03	Ash, Microwave furnace (%)	1	1	10.05							
006.99	Total Sugars, Miscellaneous (%)	6	6	4.643	1.562	4.643	1.771	0.9036	38.13%	0.1495	3.17%
006.00	Total Sugars, As sucrose (%)	3	3	5.092	0.3402	5.092	0.3402	0.1964	6.68%	0.5630	3.13%
006.01	Total Sugars, Mod. Fehling Soln (%)	1	1	6.350							
006.02	Total Sugars, TSI L-E C-V (%)	1	1	6.000							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	45	44	6.266	0.6731	6.249	0.5905	0.1113	9.45%	0.1785	3.04%
008.02	Fiber, Acid Detergent, Crucible (%)	10	10	6.265	0.3394	6.265	0.3849	0.1521	6.14%	0.1679	3.03%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	3	3	6.534	0.4578	6.534	0.4578	0.2643	7.01%	0.0940	3.02%
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	42	41	17.61	2.259	17.15	1.092	0.2132	6.37%	0.3230	2.41%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	11	11	17.84	1.371	17.74	1.293	0.4872	7.29%	0.3540	2.37%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	2	2	16.57	3.456						
010.99	Moisture, Miscellaneous (%)	17	17	8.146	0.3644	8.150	0.3798	0.1151	4.66%	0.0890	2.92%
010.11	Moisture, NIR (%)	8	8	8.278	0.9372	8.278	1.063	0.4697	12.84%	0.1758	2.91%
010.03	Moisture, Karl-Fischer (%)	1	1	8.860							
011.01	Loss on Drying, HT, 135°C 2hr (%)	62	62	8.736	0.4588	8.766	0.4407	0.0700	5.03%	0.1100	2.88%
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	6	6	8.468	0.3919	8.468	0.4444	0.2268	5.25%	0.3852	2.90%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	2	2	8.748	0.1591						
012.00	Starch, Polarimetric (Ewers) (%)	14	13	30.91	1.403	31.02	1.328	0.4605	4.28%	0.2387	1.80%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	29.35	2.248	29.30	1.795	0.7097	6.13%	0.7148	1.85%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	9	9	29.78	1.474	29.78	1.149	0.4789	3.86%	0.4968	1.83%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	4	3	27.34	1.710	27.34	1.710	1.209	6.25%		1.91%
012.11	Starch, NIR (%)	2	2	33.04	0.8697						
012.99	Starch, Miscellaneous (%)	2	2	30.52	0.3818						
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	29.24							
013.00	Fat, Pretreat, Acid hydrolysis (%)	13	13	3.740	0.6061	3.740	0.6873	0.2383	18.38%	0.2150	3.28%
013.02	Fat, Pretreat, Mojonnier, Bak Ext, Acid hydrolysis (%)	13	13	4.212	0.7457	4.219	0.6142	0.2129	14.56%	0.1830	3.22%
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	9	9	3.573	0.4771	3.573	0.5410	0.2254	15.14%	0.1353	3.30%
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	7	7	3.471	0.1973	3.471	0.2237	0.1057	6.45%	0.0730	3.32%
013.08	Fat, Pretreat, Roese-Gottlieb Modified, Alkaline Hydrolysis (%)	1	1	1.874							
015.43	Aluminum, ICP, Microwave (ppm)	6	6	134.7	25.67	134.7	29.11	14.85	21.61%	4.224	7.65%
015.41	Aluminum, ICP, Dry ash (ppm)	3	3	106.5	18.12	106.5	18.12	10.46	17.01%	15.56	7.92%
015.42	Aluminum, ICP, Open vessel (ppm)	2	2	60.29	15.26						
015.53	Aluminum, ICP-MS, Microwave (ppm)	1	1	138.1							

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017.43	Boron, ICP, Microwave (ppm)	7	7	8.067	0.9211	8.030	0.9604	0.4538	11.96%	0.1211	11.69%
017.41	Boron, ICP, Dry ash (ppm)	4	4	7.760	0.6336	7.760	0.6336	0.3168	8.16%	0.2253	11.75%
017.42	Boron, ICP, Open vessel (ppm)	3	3	8.171	0.7906	8.171	0.7906	0.5591	9.68%	0.7117	11.66%
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	7.792							
019.43	Calcium, ICP, Microwave (%)	33	33	3.396	0.2777	3.413	0.1959	0.0426	5.74%	0.0768	3.33%
019.41	Calcium, ICP, Dry ash (%)	20	20	3.384	0.1794	3.389	0.1907	0.0533	5.63%	0.0804	3.33%
019.31	Calcium, AAS, Dry ash (%)	19	19	3.393	0.2274	3.429	0.1504	0.0431	4.39%	0.0805	3.32%
019.42	Calcium, ICP, Open vessel (%)	17	16	3.417	0.2179	3.397	0.1917	0.0599	5.64%	0.0410	3.33%
019.08	Calcium, EDTA (%)	12	11	3.362	0.1313	3.363	0.1405	0.0529	4.18%	0.0214	3.33%
019.00	Calcium, Ox-Mn04 Vol. (%)	4	3	3.324	0.0274	3.324	0.0274	0.0158	0.82%	0.0377	3.34%
019.53	Calcium, ICP-MS, Microwave (%)	3	3	3.419	0.1527	3.419	0.1527	0.0882	4.47%	0.0292	3.32%
019.99	Calcium, Miscellaneous (%)	4	3	3.267	0.0454	3.267	0.0454	0.0262	1.39%	0.1400	3.35%
019.52	Calcium, ICP-MS, Open vessel (%)	2	2	3.512	0.3009						
019.09	Calcium, Ion-selective electrode (%)	1	1	3.364							
019.32	Calcium, AAS, Open vessel (%)	1	1	3.395							
019.33	Calcium, AAS, Microwave (%)	1	1	3.405							
019.44	Calcium, ICP, Dry ash (%)	1	1	3.436							
021.43	Cobalt, ICP, Microwave (ppm)	7	6	2.069	0.6574	1.983	0.5363	0.2737	27.04%	0.0742	14.43%
021.42	Cobalt, ICP, Open vessel (ppm)	4	4	1.583	0.2315	1.583	0.2315	0.1158	14.62%	0.0895	14.93%
021.53	Cobalt, ICP-MS, Microwave (ppm)	3	3	2.054	0.2207	2.054	0.2207	0.1274	10.74%	0.1346	14.35%
021.41	Cobalt, ICP, Dry ash (ppm)	2	2	1.523	0.5554						
021.00	Cobalt, Color (ppm)	1	1	1.535							
021.31	Cobalt, AAS, Dry ash (ppm)	1	1	2.035							
021.52	Cobalt, ICP-MS, Open vessel (ppm)	1	1	1.250							
022.43	Copper, ICP, Microwave (ppm)	31	30	31.24	2.701	31.19	2.362	0.5391	7.57%	0.9855	9.53%
022.42	Copper, ICP, Open vessel (ppm)	19	18	31.70	1.546	31.74	1.683	0.4958	5.30%	1.090	9.51%
022.41	Copper, ICP, Dry ash (ppm)	14	13	30.80	2.120	30.81	2.210	0.7662	7.17%	1.230	9.55%
022.31	Copper, AAS, Dry ash (ppm)	6	4	35.56	6.284	35.56	6.284	3.927	17.67%	0.2967	9.35%
022.53	Copper, ICP-MS, Microwave (ppm)	3	3	30.00	2.864	30.00	2.864	1.653	9.54%	0.7571	9.59%
022.99	Copper, Miscellaneous (ppm)	3	3	31.52	1.475	31.52	1.475	0.8516	4.68%	1.033	9.52%
022.44	Copper, ICP, Dry ash (ppm)	2	2	31.54	0.6368						
022.52	Copper, ICP-MS, Open vessel (ppm)	2	2	28.39	5.211						
022.32	Copper, AAS, Open vessel (ppm)	1	1	29.80							
022.33	Copper, AAS, Microwave (ppm)	1	1	32.03							
022.35	Copper, AAS, Dry ash (ppm)	1	1	30.30							
025.43	Iron, ICP, Microwave (ppm)	30	29	412.1	38.35	412.6	36.36	8.439	8.81%	10.76	6.46%
025.42	Iron, ICP, Open vessel (ppm)	17	17	331.4	90.18	345.1	56.76	17.21	16.45%	11.97	6.64%
025.41	Iron, ICP, Dry ash (ppm)	14	14	418.0	39.97	418.0	45.33	15.14	10.84%	15.19	6.45%
025.31	Iron, AAS, Dry ash (ppm)	10	10	398.9	81.92	411.2	59.48	23.51	14.46%	15.41	6.47%
025.53	Iron, ICP-MS, Microwave (ppm)	3	3	403.6	19.49	403.6	19.49	11.25	4.83%	44.18	6.48%

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025.33	Iron, AAS, Microwave (ppm)	2	2	384.4	59.68						
025.99	Iron, Miscellaneous (ppm)	2	2	411.0	16.26						
025.52	Iron, ICP-MS, Open vessel (ppm)	1	1	177.0							
027.43	Magnesium, ICP, Microwave (%)	23	22	0.3246	0.0220	0.3254	0.0203	0.0054	6.24%	0.0056	4.74%
027.42	Magnesium, ICP, Open vessel (%)	17	17	0.3217	0.0159	0.3217	0.0179	0.0054	5.57%	0.0083	4.74%
027.41	Magnesium, ICP, Dry ash (%)	12	12	0.3217	0.0193	0.3215	0.0214	0.0077	6.65%	0.0112	4.74%
027.31	Magnesium, AAS, Dry ash (%)	4	3	0.2115	0.1373	0.2115	0.1373	0.0971	64.93%		5.05%
027.99	Magnesium, Miscellaneous (%)	3	3	0.3000	0.0520	0.3000	0.0520				4.79%
027.53	Magnesium, ICP-MS, Microwave (%)	2	2	0.3265	0.0162						
027.33	Magnesium, AAS, Microwave (%)	1	1	0.3465							
027.44	Magnesium, ICP, Dry ash (%)	1	1	0.3311							
027.52	Magnesium, ICP-MS, Open vessel (%)	1	1	0.3230							
027.32	Magnesium, AAS, Open vessel (%)	1		0.0000							
028.43	Manganese, ICP, Microwave (ppm)	30	28	150.0	7.511	149.9	7.695	1.818	5.13%	4.002	7.53%
028.42	Manganese, ICP, Open vessel (ppm)	19	18	153.1	10.42	154.1	8.556	2.521	5.55%	2.903	7.50%
028.41	Manganese, ICP, Dry ash (ppm)	14	14	152.6	10.38	153.6	9.340	3.120	6.08%	2.974	7.50%
028.31	Manganese, AAS, Dry ash (ppm)	10	10	154.0	8.186	154.0	9.282	3.669	6.03%	4.670	7.50%
028.53	Manganese, ICP-MS, Microwave (ppm)	4	3	164.3	12.53	164.3	12.53	7.235	7.63%	2.266	7.42%
028.99	Manganese, Miscellaneous (ppm)	3	3	158.0	6.928	158.0	6.928	4.899	4.38%	2.000	7.47%
028.33	Manganese, AAS, Microwave (ppm)	2	2	166.2	1.138						
028.44	Manganese, ICP, Dry ash (ppm)	2	2	141.3	33.61						
028.52	Manganese, ICP-MS, Open vessel (ppm)	2	2	156.1	8.393						
028.00	Manganese, Color (ppm)	1	1	156.0							
028.32	Manganese, AAS, Open vessel (ppm)	1	1	169.5							
028.34	Manganese, AAS, Dry ash (ppm)	1	1	147.2							
030.01	Nitrate, Ion-selective electrode (%)	1		0.0002							
031.43	Phosphorus, ICP, Microwave (%)	33	31	0.7293	0.0434	0.7328	0.0318	0.0071	4.34%	0.0159	4.19%
031.01	Phosphorus, Photometric (%)	29	28	0.7097	0.0452	0.7143	0.0362	0.0085	5.06%	0.0117	4.21%
031.41	Phosphorus, ICP, Dry ash (%)	19	19	0.7273	0.0290	0.7274	0.0328	0.0094	4.50%	0.0185	4.20%
031.42	Phosphorus, ICP, Open vessel (%)	19	18	0.7463	0.0458	0.7424	0.0413	0.0122	5.57%	0.0204	4.18%
031.99	Phosphorus, Miscellaneous (%)	4	4	0.6888	0.0250	0.6888	0.0250	0.0125	3.62%	0.0200	4.23%
031.03	Phosphorus, Autoanalyzer (%)	2	2	0.7278	0.0039						
031.44	Phosphorus, ICP, Dry ash (%)	2	2	0.7199	0.0119						
031.53	Phosphorus, ICP-MS, Microwave (%)	2	2	0.7454	0.0218						
031.02	Phosphorus, GQMP (AOAC 935.13-Extraction) (%)	1	1	0.6640							
031.06	Phosphorus, Hach Method (%)	1	1	0.7050							
031.52	Phosphorus, ICP-MS, Open vessel (%)	1	1	0.6866							
032.43	Potassium, ICP, Microwave (%)	22	21	0.9246	0.0349	0.9275	0.0219	0.0060	2.36%	0.0134	4.05%
032.42	Potassium, ICP, Open vessel (%)	15	15	0.9305	0.0716	0.9302	0.0785	0.0253	8.44%	0.0231	4.04%
032.41	Potassium, ICP, Dry ash (%)	12	12	0.9237	0.0511	0.9219	0.0485	0.0175	5.26%	0.0200	4.05%

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032.99	Potassium, Miscellaneous (%)	3	3	0.9133	0.0275	0.9133	0.0275	0.0159	3.02%	0.0150	4.05%
032.31	Potassium, AAS, Dry ash (%)	4	2	0.9325	0.0035	0.9325	0.0035				4.04%
032.52	Potassium, ICP-MS, Open vessel (%)	2	2	0.9053	0.0349						
032.53	Potassium, ICP-MS, Microwave (%)	2	2	0.9235	0.0261						
032.02	Potassium, Flame Emission (%)	1	1	0.9075							
032.32	Potassium, AAS, Open vessel (%)	2	1	0.0198							
032.44	Potassium, ICP, Dry ash (%)	1	1	0.9572							
033.01	Salt as chloride, Poten Cl (%)	22	22	0.5015	0.0695	0.4878	0.0191	0.0051	3.92%	0.0100	4.46%
033.00	Salt as chloride, Sol Cl (%)	14	13	0.5148	0.0873	0.5005	0.0653	0.0227	13.06%	0.0168	4.44%
033.99	Salt, Miscellaneous (%)	7	7	0.4232	0.0809	0.4126	0.0654	0.0309	15.85%	0.0436	4.57%
033.03	Salt as chloride, Quantab (%)	5	5	0.4280	0.0545	0.4280	0.0545	0.0244	12.73%	0.0200	4.54%
033.05	Salt as chloride, Ion Sel Electrode (%)	3	3	0.4067	0.0643	0.4067	0.0643				4.58%
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	3	3	0.5619	0.0724	0.5619	0.0724	0.0512	12.89%	0.0327	17.45%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	2	2	0.4020	0.0255						
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	2	2	0.8782	0.5426						
034.42	Selenium, Total (Se), ICP, Open vessel (ppm)	1	1	1.207							
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	3	1								
034.99	Selenium, Total (Se), Miscellaneous (ppm)	1	1	1.020							
035.43	Sodium, ICP, Microwave (%)	25	25	0.1563	0.0184	0.1535	0.0107	0.0027	6.94%	0.0035	5.30%
035.41	Sodium, ICP, Dry ash (%)	16	16	0.1562	0.0107	0.1557	0.0110	0.0034	7.06%	0.0077	5.29%
035.42	Sodium, ICP, Open vessel (%)	16	16	0.1552	0.0137	0.1547	0.0131	0.0041	8.50%	0.0062	5.30%
035.31	Sodium, AAS, Dry ash (%)	8	7	0.1358	0.0510	0.1437	0.0377	0.0178	26.23%	0.0022	5.36%
035.99	Sodium, Miscellaneous (%)	3	3	0.2142	0.1199	0.2142	0.1199	0.0848	55.98%		5.04%
035.05	Sodium, Flame Emission (%)	2	2	0.1663	0.0018						
035.53	Sodium, ICP-MS, Microwave (%)	2	2	0.1473	0.0103						
035.52	Sodium, ICP-MS, Open vessel (%)	1	1	0.1585							
035.32	Sodium, AAS, Open vessel (%)	1		0.0000							
036.43	Sulfur, ICP, Microwave (%)	18	17	0.2872	0.0254	0.2892	0.0235	0.0071	8.11%	0.0062	4.82%
036.42	Sulfur, ICP, Open vessel (%)	13	12	0.2726	0.0223	0.2688	0.0118	0.0043	4.41%	0.0050	4.87%
036.04	Sulfur, LECO (%)	3	3	0.2875	0.0166	0.2875	0.0166	0.0118	5.79%	0.0028	4.83%
036.99	Sulfur, Miscellaneous (%)	2	2	0.2800	0.0283						
036.52	Sulfur, ICP-MS, Open vessel (%)	1	1	0.2865							
037.43	Zinc, ICP, Microwave (ppm)	32	30	141.2	10.50	141.5	10.73	2.448	7.58%	3.445	7.59%
037.42	Zinc, ICP, Open vessel (ppm)	18	17	142.9	9.892	143.8	8.794	2.666	6.12%	4.707	7.57%
037.41	Zinc, ICP, Dry ash (ppm)	14	14	134.4	32.50	140.1	13.37	4.465	9.54%	2.937	7.60%
037.31	Zinc, AAS, Dry ash (ppm)	9	9	142.8	9.275	142.8	10.52	4.382	7.36%	1.616	7.58%
037.53	Zinc, ICP-MS, Microwave (ppm)	3	3	130.0	15.41	130.0	15.41	8.899	11.86%	2.922	7.69%
037.33	Zinc, AAS, Microwave (ppm)	2	2	143.6	11.98						
037.44	Zinc, ICP, Dry ash (ppm)	2	2	115.4	15.00						
037.52	Zinc, ICP-MS, Open vessel (ppm)	2	2	122.0	35.04						

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037.99	Zinc, Miscellaneous (ppm)	4	2	140.0	2.121	140.0	2.121			2.000	7.60%
037.32	Zinc, AAS, Open vessel (ppm)	1	1	155.0							
038.43	Molybdenum, ICP, Microwave (ppm)	7	7	1.355	0.2272	1.355	0.2576	0.1217	19.02%	0.0923	15.28%
038.42	Molybdenum, ICP, Open vessel (ppm)	5	5	1.366	0.1977	1.366	0.1977	0.0884	14.48%	0.1974	15.26%
038.41	Molybdenum, ICP, Dry ash (ppm)	2	2	1.412	0.1247						
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	2	2	0.8009	0.2013						
038.53	Molybdenum, ICP-MS, Microwave (ppm)	1	1	1.539							
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	11.65							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	0.7700							
042.00	Chloride, Titrimetric (%)	6	6	0.3421	0.0744	0.3421	0.0844	0.0431	24.66%	0.0290	4.70%
042.01	Chloride, Ion-selective electrode (%)	1	1	0.2997							
042.99	Chloride, Miscellaneous (%)	1	1	0.2900							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	2,190							
102.02	Niacin, LC (ppm)	3	3	32.04	17.76	32.04	17.76	10.25	55.43%	1.097	9.49%
103.02	Pantothenic Acid, LC (ppm)	2	2	17.19	1.190						
103.99	Pantothenic Acid, Miscellaneous (ppm)	1	1	56.25							
104.03	Riboflavin, LC (ppm)	4	4	7.061	2.138	7.061	2.138	1.069	30.28%	0.8648	11.92%
104.00	Riboflavin, Fluorometric (ppm)	1	1	6.565							
105.00	Thiamine, LC (ppm)	3	3	6.032	1.842	6.032	1.842	1.063	30.53%	1.073	12.21%
106.02	Vitamin A, LC (KU / kg)	7	6	6.966	1.164	6.966	1.319	0.6733	18.94%	1.213	
106.01	Vitamin A, UV (KU / kg)	1	1	7.220							
107.99	Vitamin B12, Miscellaneous (ppb)	1	1	35.00							
108.02	Vitamin D3, LC (KU / kg)	3	3	2.088	0.3770	2.088	0.3770	0.2176	18.05%	0.2900	
108.99	Vitamin D3, Miscellaneous (KU / kg)	1	1	1.750							
108.01	Vitamin D3, LC, AOAC (KU / kg)	1	1	0.0000							
109.02	Vitamin E, LC (IU / kg)	6	3	40.12	29.51	40.12	29.51	21.30	73.56%	4.967	
109.99	Vitamin E, Miscellaneous (IU / kg)	1	1	23.00							
112.01	Pyridoxine, LC (µg / g)	2	2	4.756	1.717						
113.02	Folic acid, LC (ppm)	1	1	0.5800							
114.99	Biotin, Miscellaneous (ppm)	3	3	0.1332	0.1061	0.1332	0.1061	0.0750	79.64%	0.0215	21.67%
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	1	1	0.1248							
115.99	Non Protein N (NPN), Miscellaneous (%)	1	1	1.760							
120.00	Alanine, Post-col Ninhydrin Der (%)	17	16	0.8469	0.0741	0.8605	0.0261	0.0082	3.03%	0.0105	4.09%
120.05	Alanine, Pre-col AQC Der (%)	9	9	0.8819	0.0593	0.8819	0.0673	0.0280	7.63%	0.0125	4.08%
120.99	Alanine, Miscellaneous (%)	3	3	0.8418	0.0040	0.8418	0.0040	0.0023	0.48%	0.0523	4.10%
120.02	Alanine, Post-col OPA Der (%)	1	1	0.8710							
121.00	Arginine, Post-col Ninhydrin Der (%)	17	16	1.061	0.1016	1.080	0.0419	0.0131	3.88%	0.0141	3.95%
121.05	Arginine, Pre-col AQC Der (%)	9	9	1.109	0.0734	1.114	0.0727	0.0303	6.52%	0.0629	3.94%
121.99	Arginine, Miscellaneous (%)	3	3	1.112	0.0693	1.112	0.0693	0.0400	6.24%	0.0500	3.94%
121.02	Arginine, Post-col OPA Der (%)	1	1	1.066							

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122.00	Aspartic, Post-col Ninhydrin Der (%)	17	16	1.435	0.0417	1.430	0.0308	0.0096	2.16%	0.0105	3.79%
122.05	Aspartic, Pre-col AQC Der (%)	9	9	1.481	0.0948	1.481	0.1075	0.0448	7.26%	0.0252	3.77%
122.99	Aspartic, Miscellaneous (%)	3	3	1.205	0.3556	1.205	0.3556	0.2053	29.51%	0.0667	3.89%
122.02	Aspartic, Post-col OPA Der (%)	1	1	1.518							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	18	18	0.3172	0.0286	0.3178	0.0249	0.0073	7.83%	0.0063	4.75%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	9	9	0.3031	0.0379	0.3031	0.0430	0.0179	14.19%	0.0216	4.79%
124.99	Cysteine/Cystine, Miscellaneous (%)	2	2	0.3225	0.0460						
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.3390							
125.00	Glutamic, Post-col Ninhydrin Der (%)	17	15	3.290	0.0764	3.282	0.0654	0.0211	1.99%	0.0307	3.34%
125.05	Glutamic, Pre-col AQC Der (%)	9	9	3.389	0.1965	3.370	0.1759	0.0733	5.22%	0.0665	3.33%
125.99	Glutamic, Miscellaneous (%)	3	3	2.951	0.3846	2.951	0.3846	0.2220	13.03%	0.1250	3.40%
125.02	Glutamic, Post-col OPA Der (%)	1	1	3.401							
126.00	Glycine, Post-col Ninhydrin Der (%)	17	16	0.7746	0.0653	0.7916	0.0291	0.0091	3.68%	0.0077	4.14%
126.05	Glycine, Pre-col AQC Der (%)	9	9	0.8061	0.0371	0.8061	0.0421	0.0175	5.22%	0.0225	4.13%
126.99	Glycine, Miscellaneous (%)	3	3	0.6865	0.2178	0.6865	0.2178	0.1540	31.73%	0.0925	4.23%
126.02	Glycine, Post-col OPA Der (%)	1	1	0.8230							
127.00	Histidine, Post-col Ninhydrin Der (%)	17	16	0.4469	0.0437	0.4534	0.0287	0.0090	6.32%	0.0081	4.51%
127.05	Histidine, Pre-col AQC Der (%)	9	9	0.4571	0.0230	0.4589	0.0218	0.0091	4.74%	0.0141	4.50%
127.99	Histidine, Miscellaneous (%)	3	3	0.4628	0.0250	0.4628	0.0250	0.0177	5.41%		4.49%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.4325							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	17	17	0.6118	0.0738	0.6223	0.0491	0.0149	7.89%	0.0102	4.30%
128.05	Isoleucine, Pre-col AQC Der (%)	9	9	0.6392	0.0773	0.6481	0.0650	0.0271	10.04%	0.0209	4.27%
128.99	Isoleucine, Miscellaneous (%)	3	3	0.6217	0.0275	0.6217	0.0275	0.0195	4.43%	0.0680	4.30%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.6285							
129.00	Leucine, Post-col Ninhydrin Der (%)	17	16	1.286	0.1421	1.320	0.0396	0.0124	3.00%	0.0130	3.84%
129.05	Leucine, Pre-col AQC Der (%)	9	9	1.357	0.0940	1.357	0.1066	0.0444	7.86%	0.0277	3.82%
129.99	Leucine, Miscellaneous (%)	3	3	1.375	0.1480	1.375	0.1480	0.1046	10.76%	0.0767	3.81%
129.02	Leucine, Post-col OPA Der (%)	1	1	1.307							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	17	16	0.8023	0.0978	0.8191	0.0443	0.0138	5.41%	0.0103	4.12%
130.05	L-Lysine, Pre-col AQC Der (%)	10	9	0.8553	0.0534	0.8553	0.0605	0.0252	7.08%	0.0130	4.09%
130.99	L-Lysine, Miscellaneous (%)	5	5	0.8819	0.1306	0.8819	0.1306	0.0584	14.81%	0.0306	4.08%
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.8520							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	18	18	0.2742	0.0312	0.2788	0.0155	0.0046	5.57%	0.0082	4.85%
131.05	Methionine, PAO Pre-col AQC Der (%)	11	11	0.2799	0.0276	0.2832	0.0237	0.0089	8.36%	0.0168	4.84%
131.99	Methionine, Miscellaneous (%)	3	3	0.2983	0.0752	0.2983	0.0752	0.0434	25.21%	0.0250	4.80%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.2825							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	17	16	0.7761	0.0207	0.7760	0.0232	0.0073	2.99%	0.0118	4.16%
132.05	Phenylalanine, Pre-col AQC Der (%)	9	9	0.7621	0.0557	0.7594	0.0568	0.0237	7.48%	0.0288	4.17%
132.99	Phenylalanine, Miscellaneous (%)	3	3	0.8310	0.0201	0.8310	0.0201	0.0116	2.42%	0.0490	4.11%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.7645							

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133.00	Proline, Post-col Ninhydrin Der (%)	17	17	1.077	0.0916	1.098	0.0341	0.0103	3.10%	0.0218	3.94%
133.05	Proline, Pre-col AQC Der (%)	9	8	1.158	0.1139	1.129	0.0470	0.0208	4.16%	0.0221	3.93%
133.99	Proline, Miscellaneous (%)	3	3	1.163	0.1279	1.163	0.1279	0.0738	10.99%	0.0750	3.91%
134.00	Serine, Post-col Ninhydrin Der (%)	17	16	0.7889	0.0783	0.8037	0.0264	0.0082	3.28%	0.0114	4.13%
134.05	Serine, Pre-col AQC Der (%)	9	9	0.8262	0.0544	0.8292	0.0545	0.0227	6.57%	0.0285	4.11%
134.99	Serine, Miscellaneous (%)	3	3	0.8242	0.0663	0.8242	0.0663	0.0382	8.04%	0.0857	4.12%
134.02	Serine, Post-col OPA Der (%)	1	1	0.7145							
135.00	Threonine, Post-col Ninhydrin Der (%)	17	17	0.6097	0.0581	0.6209	0.0184	0.0056	2.97%	0.0077	4.30%
135.05	Threonine, Pre-col AQC Der (%)	9	9	0.6426	0.0336	0.6403	0.0326	0.0136	5.09%	0.0322	4.28%
135.99	Threonine, Miscellaneous (%)	4	4	0.6310	0.0910	0.6310	0.0910	0.0455	14.42%	0.0200	4.29%
135.02	Threonine, Post-col OPA Der (%)	1	1	0.6065							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	9	9	0.2375	0.0247	0.2437	0.0093	0.0039	3.83%	0.0047	4.95%
136.05	Tryptophan, Pre-col AQC Der (%)	4	4	0.2126	0.0269	0.2126	0.0269	0.0134	12.65%	0.0058	5.05%
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	3	3	0.2157	0.0220	0.2157	0.0220	0.0156	10.20%	0.0051	5.04%
136.99	Tryptophan, Miscellaneous (%)	3	3	0.3175	0.1992	0.3175	0.1992	0.1409	62.74%	0.0075	4.75%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	1	1	0.2505							
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.2275							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	13	12	0.5162	0.0410	0.5170	0.0437	0.0158	8.45%	0.0060	4.42%
137.05	Tyrosine, Pre-col AQC Der (%)	9	8	0.5366	0.0670	0.5366	0.0760	0.0336	14.17%	0.0124	4.39%
137.99	Tyrosine, Miscellaneous (%)	3	3	0.5592	0.0413	0.5592	0.0413	0.0238	7.38%	0.0190	4.37%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.4755							
138.00	Valine, Post-col Ninhydrin Der (%)	17	17	0.7904	0.0766	0.7998	0.0393	0.0119	4.92%	0.0125	4.14%
138.05	Valine, Pre-col AQC Der (%)	8	8	0.7953	0.0585	0.8077	0.0326	0.0144	4.03%	0.0236	4.13%
138.99	Valine, Miscellaneous (%)	3	3	0.7705	0.0183	0.7705	0.0183	0.0129	2.37%	0.0905	4.16%
138.02	Valine, Post-col OPA Der (%)	1	1	0.8690							
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.1240	0.0933						
139.05	Taurine, Pre-col AQC Der (%)	2	2	0.0822	0.1141						
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
162.99	Glucose, Miscellaneous (%)	1	1	5.050							
400.01	Water Activity, Aqualab chilled mirror (Units)	11	10	0.4143	0.0252	0.4115	0.0221	0.0087	5.36%	0.0098	
400.99	Water Activity, Miscellaneous (Units)	2	2	0.4268	0.0103						
516.00	Arsenic, Total (As), AA, Hydride (ppm)	1	1	0.0885							
516.52	Arsenic, Total (As), ICP-MS, Open vessel (ppm)	1	1	0.1207							
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	1	1	0.1489							
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		20.00							
518.43	Cadmium, ICP, Microwave (ppm)	3	2	0.1169	0.0302	0.1169	0.0302			0.0025	22.00%
518.53	Cadmium, ICP-MS, Microwave (ppm)	2	2	0.1116	0.0048						
518.41	Cadmium, ICP, Dry ash (ppm)	1	1	0.0914							
518.52	Cadmium, ICP-MS, Open vessel (ppm)	1	1	0.1078							
518.99	Cadmium, Miscellaneous (ppm)	1	1	0.0989							

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520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	5	5	7.814	1.132	7.814	1.132	0.5063	14.49%	0.0675	11.74%
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	3	3	6.442	1.289	6.442	1.289	0.7442	20.01%	0.4110	12.09%
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	2	2	7.160	0.6780						
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	1	1	4.757							
520.52	Chromium, Total (Cr), ICP-MS, Open vessel (ppm)	1	1	2.782							
526.53	Lead, ICP-MS, Microwave (ppm)	2	2	0.1666	0.0118						
526.41	Lead, ICP, Dry ash (ppm)	1	1	0.1687							
526.43	Lead, ICP, Microwave (ppm)	2	1	0.1831							
526.52	Lead, ICP-MS, Open vessel (ppm)	1	1	0.1793							
529.99	Mercury, Miscellaneous (ppb)	2	1	0.8488							
539.43	Nickel, ICP, Microwave (ppm)	3	3	4.477	1.133	4.477	1.133	0.6541	25.31%	0.1006	12.77%
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	4.434	0.3031						
539.41	Nickel, ICP, Dry ash (ppm)	1	1	3.756							
539.52	Nickel, ICP-MS, Open vessel (ppm)	1	1	2.191							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	2	1	0.0035							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	1	1	0.0062							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	1	1	0.5237							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	2	2	0.0088	0.0011						
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.0609							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	1	1	0.7148							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	2	2	1.692	0.0096						
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	2	2	0.1285	0.0014						
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	1	1	0.0096							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0179							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	1		0.0000							
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (% (w/w))	2		0.0000							
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	1	1	0.0081							
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1		0.0050							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (% (w/w))	2		0.0000							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0099							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (% (w/w))	2		0.0000							
752.99	Nervonic Acid (24:1) isomers, Miscellaneous (% (w/w))	1		0.0050							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w))	1	1	0.1300							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	1	1	1.685							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	1	1	3.185							

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

Poultry Feed

Test Material Code # 202421

Methods Reported: 121

Labs Reporting: 155

Issue Date : 02/29/2024

Method Precision Report

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 (%)	39	36	8.127	0.4458	0.3632	0.1323	0.3866	4.44%	1.62%	4.72%	2.922
001.99	Loss on Drying, Miscellaneous (%)	16	15	7.999	0.4397	0.4422	0.0664	0.4472	5.54%	0.83%	5.61%	6.734
002.01	Protein, Crude, Auto Kjeld-Foss (%)	17	15	17.76	0.1928	0.1414	0.0799	0.1624	0.80%	0.45%	0.92%	2.032
002.05	Protein, Crude, Copper, Boric Acid (%)	18	17	17.67	0.2424	0.2359	0.0790	0.2488	1.33%	0.45%	1.41%	3.149
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	110	103	17.91	0.3535	0.2235	0.1463	0.2671	1.25%	0.82%	1.49%	1.825
002.11	Protein, Crude, NIR (%)	9	8	21.98	4.744	2.652	0.1589	2.657	12.85%	0.77%	12.88%	16.72
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	12	12	2.823	0.2578	0.2476	0.1012	0.2675	8.77%	3.58%	9.48%	2.644
003.06	Fat, Crude, Pet Ether (%)	13	11	2.769	0.2705	0.2777	0.0282	0.2791	10.08%	1.02%	10.13%	9.887
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	11	10	2.946	0.1374	0.1312	0.0581	0.1434	4.45%	1.97%	4.87%	2.471
003.10	Fat, Crude, Randall, Pet Ether (%)	24	21	2.724	0.1832	0.1724	0.0599	0.1825	6.36%	2.21%	6.74%	3.047
003.11	Fat, Crude, NIR (%)	9	7	4.488	3.225	2.461	0.1709	2.467	66.85%	4.64%	67.01%	14.44
003.13	Fat, Crude, Randall, Hexane Ext. (%)	5	5	2.721	0.1722	0.1572	0.0992	0.1859	5.78%	3.64%	6.83%	1.875
003.14	Fat, Crude, Ankom (%)	51	48	2.731	0.2062	0.1986	0.0828	0.2152	7.27%	3.03%	7.87%	2.599
004.00	Fiber, Crude, Asbestos Free (%)	8	7	5.351	1.603	0.4025	0.1833	0.4423	8.38%	3.82%	9.21%	2.413
004.06	Fiber, Crude, Fibertec (%)	16	13	4.555	0.4551	0.3272	0.0943	0.3406	7.30%	2.10%	7.60%	3.610
004.07	Fiber, Crude, ANKOM (%)	72	65	5.236	1.519	1.083	0.1980	1.101	21.77%	3.98%	22.13%	5.562
004.11	Fiber, Crude, NIR (%)	8	8	5.848	2.623	2.621	0.1309	2.624	44.82%	2.24%	44.87%	20.04
005.00	Ash, 2h @ 600°C (%)	86	78	11.49	0.7676	0.5778	0.0907	0.5849	4.99%	0.78%	5.05%	6.448
005.05	Ash, 3h @ 550°C (%)	23	21	11.99	0.5773	0.2746	0.0806	0.2862	2.27%	0.67%	2.37%	3.553
005.11	Ash, NIR (%)	10	8	8.978	3.726	3.839	0.1075	3.840	44.39%	1.24%	44.41%	35.71
005.99	Ash, Miscellaneous (%)	9	7	11.86	0.5451	0.2678	0.1187	0.2929	2.23%	0.99%	2.43%	2.468
006.99	Total Sugars, Miscellaneous (%)	6	6	4.643	1.562	1.559	0.1247	1.564	33.57%	2.69%	33.68%	12.54
008.02	Fiber, Acid Detergent, Crucible (%)	10	10	6.265	0.3394	0.3262	0.1329	0.3522	5.21%	2.12%	5.62%	2.651
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	45	41	6.266	0.6731	0.6170	0.1668	0.6391	9.82%	2.66%	10.17%	3.831
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	11	10	17.84	1.371	1.308	0.2391	1.329	7.26%	1.33%	7.38%	5.560
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	42	38	17.61	2.259	1.495	0.2780	1.520	8.65%	1.61%	8.79%	5.469
010.11	Moisture, NIR (%)	8	7	8.278	0.9372	0.9148	0.0896	0.9192	11.24%	1.10%	11.30%	10.26
010.99	Moisture, Miscellaneous (%)	17	16	8.146	0.3644	0.3719	0.0725	0.3789	4.56%	0.89%	4.65%	5.228
011.01	Loss on Drying, HT, 135°C 2hr (%)	62	59	8.736	0.4588	0.4020	0.1079	0.4162	4.58%	1.23%	4.75%	3.857
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	6	5	8.468	0.3919	0.3204	0.1567	0.3567	3.83%	1.87%	4.26%	2.276
012.00	Starch, Polarimetric (Ewers) (%)	14	12	30.91	1.403	1.098	0.1745	1.112	3.52%	0.56%	3.57%	6.370
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	29.35	2.248	2.197	0.6745	2.298	7.49%	2.30%	7.83%	3.407
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	9	9	29.78	1.474	1.449	0.3802	1.498	4.87%	1.28%	5.03%	3.939
013.00	Fat, Pretreat, Acid hydrolysis (%)	13	13	3.740	0.6061	0.5946	0.1661	0.6174	15.90%	4.44%	16.51%	3.716
013.02	Fat, Pretreat, Mojonner, Bak Ext, Acid hydrolysis (%)	13	12	4.212	0.7457	0.7418	0.1306	0.7532	17.37%	3.06%	17.64%	5.768
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	7	7	3.471	0.1973	0.1923	0.0622	0.2021	5.54%	1.79%	5.82%	3.252

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
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	9	9	3.573	0.4771	0.4701	0.1147	0.4839	13.16%	3.21%	13.54%	4.218
015.43	Aluminum, ICP, Microwave (ppm)	6	6	134.7	25.67	25.59	2.843	25.75	19.00%	2.11%	19.11%	9.056
017.43	Boron, ICP, Microwave (ppm)	7	7	8.067	0.9211	0.9182	0.1043	0.9241	11.38%	1.29%	11.46%	8.856
019.08	Calcium, EDTA (%)	12	11	3.362	0.1313	0.1309	0.0143	0.1317	3.89%	0.43%	3.92%	9.189
019.31	Calcium, AAS, Dry ash (%)	19	18	3.393	0.2274	0.1595	0.0638	0.1718	4.65%	1.86%	5.01%	2.692
019.41	Calcium, ICP, Dry ash (%)	20	20	3.384	0.1794	0.1705	0.0789	0.1879	5.04%	2.33%	5.55%	2.381
019.42	Calcium, ICP, Open vessel (%)	17	14	3.417	0.2179	0.1595	0.0413	0.1648	4.73%	1.22%	4.88%	3.993
019.43	Calcium, ICP, Microwave (%)	33	30	3.396	0.2777	0.1922	0.0655	0.2030	5.59%	1.90%	5.90%	3.101
022.41	Copper, ICP, Dry ash (ppm)	14	12	30.80	2.120	2.045	1.027	2.288	6.66%	3.35%	7.46%	2.227
022.42	Copper, ICP, Open vessel (ppm)	19	18	31.70	1.546	1.342	1.085	1.726	4.23%	3.42%	5.44%	1.591
022.43	Copper, ICP, Microwave (ppm)	31	28	31.24	2.701	2.194	0.9512	2.391	7.09%	3.07%	7.73%	2.514
025.31	Iron, AAS, Dry ash (ppm)	10	9	398.9	81.92	43.49	14.02	45.69	10.33%	3.33%	10.85%	3.258
025.41	Iron, ICP, Dry ash (ppm)	14	14	418.0	39.97	38.81	13.54	41.10	9.28%	3.24%	9.83%	3.036
025.42	Iron, ICP, Open vessel (ppm)	17	15	331.4	90.18	46.77	11.99	48.28	13.42%	3.44%	13.85%	4.028
025.43	Iron, ICP, Microwave (ppm)	30	28	412.1	38.35	33.26	9.259	34.52	8.00%	2.23%	8.31%	3.729
027.41	Magnesium, ICP, Dry ash (%)	12	12	0.3217	0.0193	0.0181	0.0094	0.0204	5.64%	2.92%	6.35%	2.176
027.42	Magnesium, ICP, Open vessel (%)	17	16	0.3217	0.0159	0.0153	0.0060	0.0164	4.77%	1.86%	5.12%	2.755
027.43	Magnesium, ICP, Microwave (%)	23	22	0.3246	0.0220	0.0219	0.0035	0.0222	6.74%	1.08%	6.83%	6.325
028.31	Manganese, AAS, Dry ash (ppm)	10	10	154.0	8.186	7.818	3.428	8.537	5.08%	2.23%	5.54%	2.491
028.41	Manganese, ICP, Dry ash (ppm)	14	13	152.6	10.38	7.605	3.693	8.454	4.93%	2.39%	5.48%	2.289
028.42	Manganese, ICP, Open vessel (ppm)	19	16	153.1	10.42	8.030	2.807	8.506	5.18%	1.81%	5.49%	3.030
028.43	Manganese, ICP, Microwave (ppm)	30	27	150.0	7.511	7.291	3.171	7.951	4.87%	2.12%	5.31%	2.507
031.01	Phosphorus, Photometric (%)	29	26	0.7097	0.0452	0.0319	0.0074	0.0328	4.45%	1.04%	4.57%	4.407
031.41	Phosphorus, ICP, Dry ash (%)	19	19	0.7273	0.0290	0.0265	0.0169	0.0314	3.64%	2.32%	4.31%	1.859
031.42	Phosphorus, ICP, Open vessel (%)	19	17	0.7463	0.0458	0.0356	0.0192	0.0404	4.81%	2.59%	5.46%	2.108
031.43	Phosphorus, ICP, Microwave (%)	33	29	0.7293	0.0434	0.0287	0.0119	0.0311	3.91%	1.63%	4.24%	2.606
032.41	Potassium, ICP, Dry ash (%)	12	11	0.9237	0.0511	0.0436	0.0151	0.0462	4.68%	1.63%	4.95%	3.047
032.42	Potassium, ICP, Open vessel (%)	15	14	0.9305	0.0716	0.0714	0.0176	0.0735	7.71%	1.90%	7.94%	4.181
032.43	Potassium, ICP, Microwave (%)	22	19	0.9246	0.0349	0.0215	0.0098	0.0236	2.31%	1.06%	2.54%	2.410
033.00	Salt as chloride, Sol Cl (%)	14	13	0.5148	0.0873	0.0869	0.0116	0.0877	16.89%	2.25%	17.04%	7.558
033.01	Salt as chloride, Poten Cl (%)	22	21	0.5015	0.0695	0.0277	0.0063	0.0284	5.67%	1.29%	5.82%	4.505
033.03	Salt as chloride, Quantab (%)	5	5	0.4280	0.0545	0.0541	0.0089	0.0549	12.65%	2.09%	12.82%	6.134
033.99	Salt, Miscellaneous (%)	7	5	0.4232	0.0809	0.0373	0.0261	0.0455	9.60%	6.72%	11.72%	1.745
035.31	Sodium, AAS, Dry ash (%)	8	6	0.1358	0.0510	0.0241	0.0014	0.0241	15.71%	0.94%	15.74%	16.76
035.41	Sodium, ICP, Dry ash (%)	16	16	0.1562	0.0107	0.0098	0.0063	0.0116	6.24%	4.02%	7.42%	1.847
035.42	Sodium, ICP, Open vessel (%)	16	15	0.1552	0.0137	0.0137	0.0046	0.0145	8.81%	2.95%	9.29%	3.153
035.43	Sodium, ICP, Microwave (%)	25	22	0.1563	0.0184	0.0101	0.0018	0.0102	6.53%	1.18%	6.63%	5.631
036.42	Sulfur, ICP, Open vessel (%)	13	11	0.2726	0.0223	0.0109	0.0029	0.0113	4.09%	1.07%	4.23%	3.932
036.43	Sulfur, ICP, Microwave (%)	18	16	0.2872	0.0254	0.0189	0.0047	0.0195	6.49%	1.61%	6.69%	4.156
037.31	Zinc, AAS, Dry ash (ppm)	9	9	142.8	9.275	9.237	1.179	9.312	6.47%	0.83%	6.52%	7.896
037.41	Zinc, ICP, Dry ash (ppm)	14	12	134.4	32.50	9.187	3.662	9.890	6.56%	2.61%	7.06%	2.701
037.42	Zinc, ICP, Open vessel (ppm)	18	15	142.9	9.892	6.323	3.742	7.348	4.35%	2.58%	5.06%	1.963
037.43	Zinc, ICP, Microwave (ppm)	32	29	141.2	10.50	9.085	2.925	9.545	6.39%	2.06%	6.72%	3.263
038.42	Molybdenum, ICP, Open vessel (ppm)	5	5	1.366	0.1977	0.1494	0.1830	0.2363	10.94%	13.40%	17.30%	1.291
038.43	Molybdenum, ICP, Microwave (ppm)	7	6	1.355	0.2272	0.2374	0.0641	0.2459	17.26%	4.66%	17.88%	3.837
042.00	Chloride, Titrimetric (%)	6	5	0.3421	0.0744	0.0713	0.0106	0.0721	19.94%	2.97%	20.16%	6.795

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
106.02	Vitamin A, LC (KU / kg)	7	6	6.966	1.164	0.9336	0.9819	1.355	13.40%	14.10%	19.45%	1.380
120.00	Alanine, Post-col Ninhydrin Der (%)	17	15	0.8469	0.0741	0.0279	0.0082	0.0291	3.23%	0.95%	3.36%	3.534
120.05	Alanine, Pre-col AQC Der (%)	9	9	0.8819	0.0593	0.0590	0.0088	0.0596	6.69%	1.00%	6.76%	6.794
121.00	Arginine, Post-col Ninhydrin Der (%)	17	15	1.061	0.1016	0.0335	0.0120	0.0356	3.09%	1.10%	3.28%	2.977
121.05	Arginine, Pre-col AQC Der (%)	9	8	1.109	0.0734	0.0710	0.0407	0.0818	6.43%	3.69%	7.41%	2.010
122.00	Aspartic, Post-col Ninhydrin Der (%)	17	15	1.435	0.0417	0.0256	0.0082	0.0269	1.80%	0.57%	1.89%	3.283
122.05	Aspartic, Pre-col AQC Der (%)	9	9	1.481	0.0948	0.0937	0.0205	0.0959	6.32%	1.39%	6.47%	4.666
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	18	17	0.3172	0.0286	0.0230	0.0040	0.0233	7.16%	1.25%	7.26%	5.818
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	9	9	0.3031	0.0379	0.0359	0.0173	0.0399	11.85%	5.72%	13.15%	2.301
125.00	Glutamic, Post-col Ninhydrin Der (%)	17	14	3.290	0.0764	0.0497	0.0252	0.0557	1.52%	0.77%	1.70%	2.214
125.05	Glutamic, Pre-col AQC Der (%)	9	9	3.389	0.1965	0.1918	0.0609	0.2012	5.66%	1.80%	5.94%	3.302
126.00	Glycine, Post-col Ninhydrin Der (%)	17	15	0.7746	0.0653	0.0496	0.0052	0.0499	6.31%	0.67%	6.35%	9.538
126.05	Glycine, Pre-col AQC Der (%)	9	8	0.8061	0.0371	0.0386	0.0128	0.0406	4.78%	1.59%	5.04%	3.169
127.00	Histidine, Post-col Ninhydrin Der (%)	17	15	0.4469	0.0437	0.0230	0.0059	0.0238	5.05%	1.30%	5.21%	4.006
127.05	Histidine, Pre-col AQC Der (%)	9	9	0.4571	0.0230	0.0218	0.0104	0.0242	4.77%	2.28%	5.29%	2.318
128.00	Isoleucine, Post-col Ninhydrin Der (%)	17	16	0.6118	0.0738	0.0401	0.0069	0.0407	6.40%	1.10%	6.49%	5.900
128.05	Isoleucine, Pre-col AQC Der (%)	9	8	0.6392	0.0773	0.0463	0.0132	0.0481	7.01%	2.00%	7.29%	3.640
129.00	Leucine, Post-col Ninhydrin Der (%)	17	15	1.286	0.1421	0.0401	0.0099	0.0413	3.04%	0.75%	3.13%	4.192
129.05	Leucine, Pre-col AQC Der (%)	9	9	1.357	0.0940	0.0927	0.0221	0.0953	6.83%	1.63%	7.02%	4.312
130.00	L-Lysine, Post-col Ninhydrin Der (%)	17	14	0.8023	0.0978	0.0389	0.0069	0.0395	4.71%	0.84%	4.78%	5.701
130.05	L-Lysine, Pre-col AQC Der (%)	10	9	0.8553	0.0534	0.0530	0.0096	0.0538	6.19%	1.12%	6.29%	5.609
130.99	L-Lysine, Miscellaneous (%)	5	5	0.8819	0.1306	0.1292	0.0275	0.1321	14.65%	3.12%	14.97%	4.803
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	18	16	0.2742	0.0312	0.0169	0.0045	0.0175	6.02%	1.59%	6.23%	3.908
131.05	Methionine, PAO Pre-col AQC Der (%)	11	11	0.2799	0.0276	0.0264	0.0116	0.0288	9.41%	4.16%	10.29%	2.475
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	17	16	0.7761	0.0207	0.0202	0.0067	0.0213	2.60%	0.86%	2.74%	3.190
132.05	Phenylalanine, Pre-col AQC Der (%)	9	8	0.7621	0.0557	0.0580	0.0165	0.0603	7.60%	2.16%	7.90%	3.658
133.00	Proline, Post-col Ninhydrin Der (%)	17	15	1.077	0.0916	0.0406	0.0148	0.0432	3.70%	1.35%	3.94%	2.920
133.05	Proline, Pre-col AQC Der (%)	9	7	1.158	0.1139	0.0309	0.0145	0.0341	2.76%	1.29%	3.05%	2.356
134.00	Serine, Post-col Ninhydrin Der (%)	17	15	0.7889	0.0783	0.0232	0.0084	0.0247	2.87%	1.05%	3.06%	2.926
134.05	Serine, Pre-col AQC Der (%)	9	9	0.8262	0.0544	0.0513	0.0256	0.0573	6.20%	3.10%	6.93%	2.237
135.00	Threonine, Post-col Ninhydrin Der (%)	17	16	0.6097	0.0581	0.0172	0.0063	0.0183	2.76%	1.01%	2.94%	2.906
135.05	Threonine, Pre-col AQC Der (%)	9	9	0.6426	0.0336	0.0283	0.0256	0.0382	4.40%	3.99%	5.94%	1.489
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	9	8	0.2375	0.0247	0.0063	0.0036	0.0072	2.56%	1.45%	2.95%	2.027
137.00	Tyrosine, Post-col Ninhydrin Der (%)	13	12	0.5162	0.0410	0.0409	0.0045	0.0411	7.91%	0.87%	7.96%	9.114
137.05	Tyrosine, Pre-col AQC Der (%)	9	8	0.5366	0.0670	0.0667	0.0097	0.0674	12.43%	1.81%	12.56%	6.938
138.00	Valine, Post-col Ninhydrin Der (%)	17	16	0.7904	0.0766	0.0410	0.0088	0.0419	5.08%	1.09%	5.20%	4.753
138.05	Valine, Pre-col AQC Der (%)	8	7	0.7953	0.0585	0.0202	0.0142	0.0247	2.48%	1.74%	3.03%	1.736
400.01	Water Activity, Aqualab chilled mirror (Units)	11	10	0.4143	0.0252	0.0245	0.0083	0.0258	5.91%	2.01%	6.24%	3.106
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	5	5	7.814	1.132	1.131	0.0556	1.133	14.48%	0.71%	14.50%	20.38

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