

Animal Feed Scheme
Cattle Feed, Medicated
Test Material Code # 201831

Method Summary Report
(Precision Report Follows)

Methods Reported: 402
Labs Reporting: 199
Issue Date : 12/31/2018

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO PT ffp - Robust sd	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Horwitz %RSD
000.02	Urea, As protein, Colorimetric (%)	1	1	8.350							
001.00	Loss on Drying, Vac 95°C 5 hr (%)	5	5	7.872	0.1887	7.872	0.1887	0.1055	2.40%	0.0800	2.93%
001.03	Loss on Drying, Low temp. methods (%)	5	5	7.785	0.1450	7.785	0.1450	0.0810	1.86%	0.0654	2.94%
001.05	Loss on Drying, LECO (%)	2	2	7.368	0.2015						
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	48	47	7.766	0.2953	7.776	0.2263	0.0413	2.91%	0.0996	2.94%
001.99	Loss on Drying, Miscellaneous (%)	24	23	7.636	0.5644	7.679	0.4863	0.1268	6.33%	0.1183	2.94%
002.01	Protein, Crude, Auto Kjel-Foss (%)	18	17	30.96	0.2906	30.96	0.3295	0.0999	1.06%	0.0964	1.80%
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	4	3	31.27	0.2438	31.27	0.2438	0.1759	0.78%	0.1107	1.79%
002.03	Protein, Crude, Hach Method (%)	2	2	31.53	0.5091						
002.04	Protein, Crude, Copper Catalyst (%)	4	3	29.79	0.9671	29.79	0.9671	0.6979	3.25%	0.0167	1.83%
002.05	Protein, Crude, Copper, Boric Acid (%)	34	32	31.11	0.4022	31.08	0.3716	0.0821	1.20%	0.1372	1.79%
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	128	124	31.52	1.016	31.45	0.3140	0.0352	1.00%	0.2133	1.78%
002.08	Protein, Crude, Cu/Ti (%)	1	1	31.14							
002.10	Protein, Crude, Block dig/distillation (%)	1	1	31.09							
002.11	Protein, Crude, NIR (%)	5	5	30.94	6.718	30.94	6.718	3.756	21.72%	0.3160	1.80%
002.99	Protein, Crude, Miscellaneous (%)	1	1	31.40							
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	13	13	3.159	0.4030	3.167	0.4396	0.1524	13.88%	0.0718	3.36%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	2.155							
003.06	Fat, Crude, Pet Ether (%)	20	20	2.875	0.4982	2.946	0.3818	0.1067	12.96%	0.1057	3.40%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	14	3.014	0.4634	3.014	0.5255	0.1756	17.44%	0.0759	3.39%
003.10	Fat, Crude, Randall, Pet Ether (%)	34	33	2.529	0.4281	2.490	0.3577	0.0778	14.37%	0.0830	3.49%
003.11	Fat, Crude, NIR (%)	6	6	3.202	0.6972	3.202	0.7906	0.4035	24.69%	0.0567	3.36%
003.12	Fat, Crude, Hexane Ext (%)	5	4	2.439	0.3604	2.439	0.3604	0.2601	14.78%	0.0343	3.50%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	6	6	2.893	0.3832	2.893	0.4345	0.2217	15.02%	0.0733	3.41%
003.14	Fat, Crude, Ankom (%)	51	51	2.543	0.4149	2.535	0.3524	0.0617	13.90%	0.1155	3.48%
003.99	Fat, Crude, Miscellaneous (%)	5	4	3.124	0.3325	3.124	0.3325	0.2078	10.64%	0.0425	3.37%
004.00	Fiber, Crude, Asbestos Free (%)	17	17	9.742	0.9009	9.602	0.5024	0.1523	5.23%	0.1997	2.85%
004.03	Fiber, Crude, Fritted Glass (%)	6	6	10.10	1.646	10.10	1.866	0.9523	18.48%	0.5597	2.82%
004.06	Fiber, Crude, Fibertec (%)	26	26	9.486	0.5170	9.462	0.4418	0.1083	4.67%	0.1739	2.85%
004.07	Fiber, Crude, ANKOM (%)	64	63	10.02	1.153	9.913	0.9827	0.1548	9.91%	0.3603	2.83%
004.11	Fiber, Crude, NIR (%)	4	3	10.23	0.6577	10.23	0.6577	0.5813	6.43%	0.0367	2.82%
004.99	Fiber, Crude, Miscellaneous (%)	5	5	9.162	0.7928	9.162	0.7928	0.4432	8.65%	0.1840	2.87%

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005.00	Ash, 2h @ 600°C (%)	96	94	22.42	0.3575	22.42	0.2907	0.0375	1.30%	0.1505	2.11%
005.02	Ash, LECO (%)	1	1	23.16							
005.03	Ash, Microwave furnace (%)	1	1	21.95							
005.05	Ash, 3h @ 550°C (%)	35	34	22.81	0.4239	22.77	0.3003	0.0644	1.32%	0.1077	2.10%
005.11	Ash, NIR (%)	5	5	16.92	7.276	16.92	7.276	4.067	42.99%	0.1620	2.43%
005.99	Ash, Miscellaneous (%)	11	11	22.49	0.8846	22.61	0.6712	0.2530	2.97%	0.2006	2.10%
006.00	Total Sugars, As sucrose (%)	2	2	2.573	0.2510						
006.99	Total Sugars, Miscellaneous (%)	3	3	3.905	3.118	3.905	3.118	2.250	79.83%	0.0967	3.26%
008.02	Fiber, Acid Detergent, Crucible (%)	14	14	12.87	1.141	12.94	1.114	0.3722	8.61%	0.2177	2.72%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	15.05							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	46	45	13.54	1.464	13.44	1.327	0.2474	9.88%	0.2835	2.71%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	3	3	12.85	3.344	12.85	3.344	2.413	26.03%	0.3267	2.72%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	22.91							
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	13	13	23.78	1.287	23.78	1.454	0.5041	6.12%	0.1664	2.05%
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	44	43	24.24	2.508	23.97	2.115	0.4031	8.82%	0.6289	2.04%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	3	3	16.77	10.68	16.77	10.68	7.709	63.69%	0.3167	2.44%
010.03	Moisture, Karl-Fischer (%)	2	2	6.875	0.1061						
010.11	Moisture, NIR (%)	4	4	8.060	1.193	8.060	1.193	0.7457	14.80%	0.1500	2.92%
010.99	Moisture, Miscellaneous (%)	19	17	7.803	0.4856	7.814	0.4147	0.1257	5.31%	0.0918	2.94%
011.01	Loss on Drying, 135°C 2hr (%)	64	63	8.970	0.5795	8.991	0.4954	0.0780	5.51%	0.1394	2.87%
011.02	Loss on Drying, 130°C for 2 hours (%)	3	3	8.677	0.8018	8.677	0.8018	0.5786	9.24%	0.2400	2.89%
011.99	Loss on Drying, High Temp. Methods Miscellaneous (%)	2	2	8.950	0.7778						
012.00	Starch, Polarimetric (Ewers) (%)	18	18	7.055	0.4500	7.105	0.3884	0.1144	5.47%	0.1614	2.98%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	11	11	8.169	3.134	7.365	1.066	0.4017	14.47%	0.2509	2.96%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	3	3	8.162	3.446	8.162	3.446	2.487	42.22%	0.2500	2.92%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	4	4	6.629	0.7994	6.629	0.7994	0.4996	12.06%	0.0575	3.01%
012.11	Starch, NIR (%)	4	3	5.462	0.6866	5.462	0.6866	0.4955	12.57%	0.1500	3.10%
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	18	18	3.924	0.6464	3.937	0.7026	0.2070	17.84%	0.1185	3.25%
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	14	13	4.492	0.2692	4.513	0.2575	0.0893	5.70%	0.0879	3.19%
013.08	Fat, Base Pretreat, Roese-Gottlieb Modified (%)	1	1	3.883							
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	6	5	3.305	0.6373	3.305	0.6373	0.3563	19.29%	0.0326	3.34%
013.12	Fat, Acid Pretreat, NIR- Acid Hydrolysis (%)	1	1	4.205							
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	6	6	4.361	0.8614	4.361	0.9768	0.4985	22.40%	0.1343	3.20%
015.41	Aluminum, ICP, Dry ash (mg / kg (ppm))	4	4	506.9	72.35	506.9	72.35	45.22	14.27%	16.42	6.27%
015.42	Aluminum, ICP, Open vessel (mg / kg (ppm))	1	1	506.8							
015.43	Aluminum, ICP, Microwave (mg / kg (ppm))	7	7	498.7	97.44	493.9	99.23	46.88	20.09%	10.91	6.29%
015.52	Aluminum, ICP-MS, Open vessel (mg / kg (ppm))	1	1	345.5							
015.53	Aluminum, ICP-MS, Microwave (mg / kg (ppm))	1	1	554.5							
017.41	Boron, ICP, Dry ash (mg / kg (ppm))	4	4	11.08	1.790	11.08	1.790	1.119	16.16%	0.5400	11.14%
017.42	Boron, ICP, Open vessel (mg / kg (ppm))	6	6	10.83	2.435	10.07	0.7332	0.3742	7.28%	0.5707	11.30%

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017.43	Boron, ICP, Microwave (mg / kg (ppm))	6	6	10.81	3.886	10.81	4.406	2.249	40.78%	0.3483	11.18%
019.00	Calcium, Ox-Mn04 Vol. (%)	11	10	4.473	0.1617	4.476	0.1765	0.0697	3.94%	0.0265	3.19%
019.02	Calcium, Hach Method (%)	2	2	4.785	0.5873						
019.03	Calcium, Semiauto (Autoanalyzer) (%)	1	1	4.465							
019.08	Calcium, EDTA (%)	14	14	4.661	0.4732	4.638	0.3929	0.1313	8.47%	0.0977	3.18%
019.09	Calcium, Ion-selective electrode (%)	1	1	3.941							
019.31	Calcium, AAS, Dry ash (%)	18	17	4.389	0.3413	4.407	0.2973	0.0901	6.75%	0.0594	3.20%
019.32	Calcium, AAS, Open vessel (%)	2	2	4.651	0.2765						
019.33	Calcium, AAS, Microwave (%)	2	2	4.825	0.2828						
019.35	Calcium, AAS, Open vessel (%)	1	1	4.432							
019.41	Calcium, ICP, Dry ash (%)	28	26	4.471	0.3019	4.471	0.3423	0.0839	7.66%	0.0878	3.19%
019.42	Calcium, ICP, Open vessel (%)	22	22	4.478	0.3210	4.501	0.2572	0.0685	5.71%	0.1235	3.19%
019.43	Calcium, ICP, Microwave (%)	27	27	4.429	0.2299	4.432	0.2208	0.0531	4.98%	0.0827	3.20%
019.44	Calcium, ICP, Dry ash (%)	1	1	4.328							
019.51	Calcium, ICP-MS, Dry ash (%)	1	1	4.575							
019.52	Calcium, ICP-MS, Open vessel (%)	3	3	4.420	0.4510	4.420	0.4510	0.3255	10.20%	0.2667	3.20%
019.53	Calcium, ICP-MS, Microwave (%)	6	6	4.514	0.0929	4.514	0.1053	0.0538	2.33%	0.1569	3.19%
019.99	Calcium, Miscellaneous (%)	5	5	4.421	0.2834	4.421	0.2834	0.1584	6.41%	0.0934	3.20%
021.31	Cobalt, AAS, Dry ash (mg / kg (ppm))	2	2	20.48	0.6788						
021.34	Cobalt, AAS, Graphite furnace (mg / kg (ppm))	1	1	20.27							
021.41	Cobalt, ICP, Dry ash (mg / kg (ppm))	3	3	18.77	8.976	18.77	8.976	7.934	47.82%	3.993	10.29%
021.42	Cobalt, ICP, Open vessel (mg / kg (ppm))	5	5	17.14	1.477	17.14	1.477	0.8256	8.61%	0.6602	10.43%
021.43	Cobalt, ICP, Microwave (mg / kg (ppm))	6	6	18.04	2.228	18.04	2.526	1.289	14.01%	0.3166	10.35%
021.52	Cobalt, ICP-MS, Open vessel (mg / kg (ppm))	4	4	17.70	1.487	17.70	1.487	0.9291	8.40%	1.813	10.38%
021.53	Cobalt, ICP-MS, Microwave (mg / kg (ppm))	7	7	19.61	2.259	19.52	2.359	1.114	12.09%	0.6662	10.23%
022.31	Copper, AAS, Dry ash (mg / kg (ppm))	12	12	595.7	38.55	599.1	34.84	12.57	5.81%	10.99	6.11%
022.32	Copper, AAS, Open vessel (mg / kg (ppm))	2	2	685.8	37.23						
022.33	Copper, AAS, Microwave (mg / kg (ppm))	2	2	657.2	68.07						
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	23	23	591.7	71.97	598.0	58.18	15.17	9.73%	22.29	6.11%
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	21	21	693.0	48.87	692.1	42.04	11.47	6.07%	11.76	5.98%
022.43	Copper, ICP, Microwave (mg / kg (ppm))	25	23	673.4	71.26	675.3	48.93	12.75	7.25%	16.17	6.00%
022.44	Copper, ICP, Dry ash (mg / kg (ppm))	1	1	795.7							
022.51	Copper, ICP-MS, Dry ash (mg / kg (ppm))	1	1	559.5							
022.52	Copper, ICP-MS, Open vessel (mg / kg (ppm))	3	3	645.1	15.68	645.1	15.68	11.32	2.43%	22.43	6.04%
022.53	Copper, ICP-MS, Microwave (mg / kg (ppm))	5	5	651.9	34.43	651.9	34.43	19.25	5.28%	36.50	6.03%
022.99	Copper, Miscellaneous (mg / kg (ppm))	4	4	673.0	68.38	673.0	68.38	42.74	10.16%	52.00	6.00%
024.99	Iodine, Miscellaneous (mg / kg (ppm))	1	1	33.55							
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	13	13	1,431	193.1	1,404	127.2	44.10	9.06%	34.12	5.37%
025.32	Iron, AAS, Open vessel (mg / kg (ppm))	2	2	1,503	57.15						
025.35	Iron, AAS, Open vessel (mg / kg (ppm))	1	1	1,314							

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025.41	Iron, ICP, Dry ash (mg / kg (ppm))	21	21	1,273	126.7	1,278	133.0	36.29	10.41%	31.18	5.45%
025.42	Iron, ICP, Open vessel (mg / kg (ppm))	16	16	1,150	300.6	1,215	177.0	55.30	14.56%	36.47	5.49%
025.43	Iron, ICP, Microwave (mg / kg (ppm))	19	18	1,265	169.6	1,289	132.3	38.97	10.26%	42.32	5.44%
025.51	Iron, ICP-MS, Dry ash (mg / kg (ppm))	1	1	1,378							
025.53	Iron, ICP-MS, Microwave (mg / kg (ppm))	3	3	1,364	77.61	1,364	77.61	56.01	5.69%	85.67	5.40%
025.99	Iron, Miscellaneous (mg / kg (ppm))	3	3	1,438	84.57	1,438	84.57	74.75	5.88%	141.7	5.36%
027.31	Magnesium, AAS, Dry ash (%)	10	9	0.9280	0.0242	0.9284	0.0266	0.0111	2.86%	0.0128	4.04%
027.32	Magnesium, AAS, Open vessel (%)	2	2	0.9155	0.0488						
027.33	Magnesium, AAS, Microwave (%)	3	3	0.9587	0.0454	0.9587	0.0454	0.0328	4.73%	0.0227	4.03%
027.41	Magnesium, ICP, Dry ash (%)	24	24	0.9239	0.0588	0.9186	0.0543	0.0138	5.91%	0.0243	4.05%
027.42	Magnesium, ICP, Open vessel (%)	21	21	0.9383	0.0717	0.9290	0.0511	0.0139	5.50%	0.0314	4.04%
027.43	Magnesium, ICP, Microwave (%)	24	23	0.9200	0.1607	0.9177	0.0592	0.0154	6.45%	0.0108	4.05%
027.44	Magnesium, ICP, Dry ash (%)	1	1	1.022							
027.51	Magnesium, ICP-MS, Dry ash (%)	1	1	0.9300							
027.52	Magnesium, ICP-MS, Open vessel (%)	3	3	0.8968	0.0128	0.8968	0.0128	0.0092	1.42%	0.0217	4.07%
027.53	Magnesium, ICP-MS, Microwave (%)	5	5	0.9584	0.0244	0.9584	0.0244	0.0136	2.54%	0.0401	4.03%
027.99	Magnesium, Miscellaneous (%)	4	4	0.9525	0.0443	0.9525	0.0443	0.0277	4.65%	0.0300	4.03%
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	12	11	1,089	72.76	1,082	63.67	24.00	5.89%	13.84	5.59%
028.32	Manganese, AAS, Open vessel (mg / kg (ppm))	2	2	1,133	23.10						
028.33	Manganese, AAS, Microwave (mg / kg (ppm))	1	1	999.2							
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	22	22	1,041	72.58	1,045	71.90	19.16	6.88%	23.69	5.62%
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	20	19	1,086	78.66	1,082	60.89	17.46	5.63%	18.24	5.59%
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	24	23	1,078	67.57	1,075	71.47	18.63	6.65%	27.00	5.59%
028.44	Manganese, ICP, Dry ash (mg / kg (ppm))	1	1	1,167							
028.51	Manganese, ICP-MS, Dry ash (mg / kg (ppm))	1	1	1,050							
028.52	Manganese, ICP-MS, Open vessel (mg / kg (ppm))	3	3	1,084	32.74	1,084	32.74	23.63	3.02%	39.33	5.59%
028.53	Manganese, ICP-MS, Microwave (mg / kg (ppm))	6	6	1,011	167.6	1,054	76.87	39.23	7.29%	35.44	5.61%
028.99	Manganese, Miscellaneous (mg / kg (ppm))	3	3	1,113	42.99	1,113	42.99	31.03	3.86%	98.00	5.57%
031.00	Phosphorus, Vol (%)	1	1	2.205							
031.01	Phosphorus, Photometric (%)	43	42	2.143	0.2053	2.147	0.0904	0.0174	4.21%	0.0301	3.57%
031.02	Phosphorus, GQMP (AOAC 935.13-Extraction) (%)	2	2	2.198	0.0601						
031.03	Phosphorus, Autoanalyzer (%)	4	4	2.230	0.0494	2.230	0.0494	0.0309	2.22%	0.0369	3.55%
031.06	Phosphorus, Hach Method (%)	1	1	2.165							
031.41	Phosphorus, ICP, Dry ash (%)	25	24	2.109	0.2386	2.141	0.1572	0.0401	7.34%	0.0442	3.57%
031.42	Phosphorus, ICP, Open vessel (%)	20	19	2.123	0.1109	2.131	0.0774	0.0222	3.63%	0.0376	3.57%
031.43	Phosphorus, ICP, Microwave (%)	25	24	2.182	0.1406	2.168	0.1255	0.0320	5.79%	0.0419	3.56%
031.44	Phosphorus, ICP, Dry ash (%)	2	2	2.051	0.1743						
031.51	Phosphorus, ICP-MS, Dry ash (%)	1	1	2.215							
031.52	Phosphorus, ICP-MS, Open vessel (%)	1	1	1.985							
031.53	Phosphorus, ICP-MS, Microwave (%)	6	6	2.241	0.0809	2.241	0.0918	0.0468	4.10%	0.0296	3.54%

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031.99	Phosphorus, Miscellaneous (%)	5	5	1.945	0.2377	1.945	0.2377	0.1329	12.22%	0.0254	3.62%
032.02	Potassium, Flame Emission (%)	1	1	1.410							
032.31	Potassium, AAS, Dry ash (%)	12	11	1.426	0.0959	1.426	0.1087	0.0410	7.63%	0.0167	3.79%
032.32	Potassium, AAS, Open vessel (%)	2	2	1.394	0.1001						
032.33	Potassium, AAS, Microwave (%)	1	1	1.605							
032.41	Potassium, ICP, Dry ash (%)	24	24	1.432	0.1134	1.428	0.1123	0.0287	7.87%	0.0543	3.79%
032.42	Potassium, ICP, Open vessel (%)	20	20	1.437	0.0539	1.433	0.0458	0.0128	3.20%	0.0238	3.79%
032.43	Potassium, ICP, Microwave (%)	26	26	1.433	0.0777	1.432	0.0694	0.0170	4.85%	0.0210	3.79%
032.44	Potassium, ICP, Dry ash (%)	1	1	1.377							
032.51	Potassium, ICP-MS, Dry ash (%)	1	1	1.405							
032.52	Potassium, ICP-MS, Open vessel (%)	2	2	1.298	0.0884						
032.53	Potassium, ICP-MS, Microwave (%)	5	4	1.458	0.0705	1.458	0.0705	0.0441	4.84%	0.0966	3.78%
032.99	Potassium, Miscellaneous (%)	6	6	1.229	0.4459	1.366	0.1435	0.0732	10.51%	0.0300	3.82%
033.00	Salt as chloride, Sol Cl (%)	24	23	4.714	0.3579	4.741	0.2409	0.0628	5.08%	0.0427	3.16%
033.01	Salt as chloride, Poten Cl (%)	36	36	4.930	0.1406	4.921	0.1013	0.0211	2.06%	0.0651	3.15%
033.03	Salt as chloride, Quantab (%)	6	5	4.795	0.3507	4.795	0.3507	0.2127	7.31%	0.0100	3.16%
033.05	Salt as chloride, Ion Sel Electrode (%)	3	3	4.920	0.6368	4.920	0.6368	0.4595	12.94%	0.0800	3.15%
033.99	Salt, Miscellaneous (%)	9	8	3.956	1.501	4.264	0.8665	0.3829	20.32%	0.0420	3.22%
034.04	Selenium, AA, Hydride (mg / kg (ppm))	5	3	9.829	0.2814	9.829	0.2814	0.2031	2.86%	0.1745	11.34%
034.31	Selenium, AAS, Dry ash (mg / kg (ppm))	1	1	4.355							
034.41	Selenium, ICP, Dry ash (mg / kg (ppm))	2	2	7.288	1.991						
034.42	Selenium, ICP, Open vessel (mg / kg (ppm))	1	1	9.850							
034.43	Selenium, ICP, Microwave (mg / kg (ppm))	6	6	10.14	1.554	10.14	1.763	0.8995	17.39%	0.5894	11.29%
034.52	Selenium, ICP-MS, Open vessel (mg / kg (ppm))	3	3	8.882	0.9776	8.882	0.9776	0.7055	11.01%	0.3100	11.52%
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	11	11	10.23	1.114	10.17	1.125	0.4240	11.07%	0.3334	11.28%
034.99	Selenium, Miscellaneous (mg / kg (ppm))	2	2	10.33	2.722						
035.01	Sodium, Ion-selective electrode (%)	2	2	1.791	0.1206						
035.05	Sodium, Flame Emission (%)	4	3	1.768	0.0683	1.768	0.0683	0.0493	3.86%	0.0167	3.67%
035.31	Sodium, AAS, Dry ash (%)	13	12	1.706	0.0842	1.705	0.0867	0.0313	5.08%	0.0234	3.69%
035.32	Sodium, AAS, Open vessel (%)	2	2	1.668	0.1439						
035.33	Sodium, AAS, Microwave (%)	1	1	1.800							
035.41	Sodium, ICP, Dry ash (%)	23	22	1.662	0.1359	1.658	0.1170	0.0312	7.05%	0.0407	3.71%
035.42	Sodium, ICP, Open vessel (%)	17	16	1.715	0.1007	1.718	0.1063	0.0332	6.19%	0.0284	3.69%
035.43	Sodium, ICP, Microwave (%)	21	21	1.650	0.3628	1.721	0.1449	0.0395	8.42%	0.0249	3.69%
035.51	Sodium, ICP-MS, Dry ash (%)	1	1	1.770							
035.52	Sodium, ICP-MS, Open vessel (%)	1	1	1.725							
035.53	Sodium, ICP-MS, Microwave (%)	6	6	1.827	0.0510	1.827	0.0578	0.0295	3.17%	0.0873	3.65%
035.99	Sodium, Miscellaneous (%)	5	5	1.727	0.0610	1.727	0.0610	0.0341	3.53%	0.1460	3.68%
036.04	Sulfur, LECO (%)	3	3	0.6133	0.0574	0.6133	0.0574	0.0414	9.36%	0.0243	4.31%
036.42	Sulfur, ICP, Open vessel (%)	19	19	0.6444	0.0443	0.6407	0.0310	0.0089	4.83%	0.0206	4.28%

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036.43	Sulfur, ICP, Microwave (%)	11	11	0.6593	0.0745	0.6484	0.0541	0.0204	8.35%	0.0117	4.27%
036.52	Sulfur, ICP-MS, Open vessel (%)	2	2	2,667	3,770						
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.6825							
036.99	Sulfur, Miscellaneous (%)	2	2	0.6150	0.0424						
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	13	13	1,371	122.9	1,363	118.6	41.11	8.70%	28.86	5.40%
037.32	Zinc, AAS, Open vessel (mg / kg (ppm))	2	2	1,463	108.4						
037.33	Zinc, AAS, Microwave (mg / kg (ppm))	2	2	1,552	228.9						
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	23	23	1,290	91.92	1,293	87.48	22.80	6.77%	40.10	5.44%
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	19	19	1,392	102.7	1,382	82.68	23.71	5.98%	21.60	5.39%
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	25	23	1,317	268.8	1,370	78.27	20.40	5.71%	36.64	5.39%
037.44	Zinc, ICP, Dry ash (mg / kg (ppm))	1	1	1,546							
037.51	Zinc, ICP-MS, Dry ash (mg / kg (ppm))	1	1	1,284							
037.52	Zinc, ICP-MS, Open vessel (mg / kg (ppm))	3	3	1,349	138.2	1,349	138.2	99.74	10.25%	63.00	5.41%
037.53	Zinc, ICP-MS, Microwave (mg / kg (ppm))	5	5	1,434	61.66	1,434	61.66	34.47	4.30%	43.00	5.36%
037.99	Zinc, Miscellaneous (mg / kg (ppm))	5	5	1,369	127.1	1,369	127.1	71.07	9.29%	19.10	5.40%
038.41	Molybdenum, ICP, Dry ash (mg / kg (ppm))	3	3	3.644	0.1553	3.644	0.1553	0.1373	4.26%	0.5297	13.17%
038.42	Molybdenum, ICP, Open vessel (mg / kg (ppm))	6	6	3.358	0.5637	3.400	0.5387	0.2749	15.84%	0.1852	13.31%
038.43	Molybdenum, ICP, Microwave (mg / kg (ppm))	6	6	3.888	1.043	3.805	0.9831	0.5017	25.84%	0.0593	13.08%
038.52	Molybdenum, ICP-MS, Open vessel (mg / kg (ppm))	1	1	3.295							
038.53	Molybdenum, ICP-MS, Microwave (mg / kg (ppm))	5	5	3.646	0.4089	3.646	0.4089	0.2286	11.22%	0.1623	13.17%
040.42	Barium, ICP, Open vessel (mg / kg (ppm))	1	1	8.085							
040.53	Barium, ICP-MS, Microwave (mg / kg (ppm))	1	1	7.547							
041.53	Vanadium, ICP-MS, Microwave (mg / kg (ppm))	1	1	6.290							
042.00	Chloride, Titrimetric (%)	1	1	2.973							
042.99	Chloride, Miscellaneous (%)	1	1	1.220							
102.01	Niacin, Microbiological (mg / kg (ppm))	1	1	67.05							
103.01	Pantothenic Acid, Microbiological (mg / kg (ppm))	1	1	8.090							
104.00	Riboflavin, Fluorometric (mg / kg (ppm))	2	2	6.390	1.400						
104.03	Riboflavin, LC (mg / kg (ppm))	1	1	2.810							
105.00	Thiamine, LC (mg / kg (ppm))	1	1	1.785							
105.01	Thiamine, Fluorometer (mg / kg (ppm))	1	1	2.995							
106.00	Vitamin A, Color (KU / kg)	2	2	192.8	31.46						
106.01	Vitamin A, UV (KU / kg)	1	1	218.0							
106.02	Vitamin A, LC (KU / kg)	23	23	165.9	52.72	172.5	42.96	11.20	24.91%	20.47	
106.99	Vitamin A, Miscellaneous (KU / kg)	1	1	138.1							
107.00	Vitamin B12, Microbiological (µg / kg (ppb))	1	1	31.70							
108.02	Vitamin D3, LC (KU / kg)	5	4	11.07	4.583	11.07	4.583	3.308	41.40%	0.6625	
109.02	Vitamin E, LC (IU / kg)	19	19	239.6	69.80	246.5	61.68	17.69	25.02%	15.47	
109.99	Vitamin E, Miscellaneous (IU / kg)	1	1	302.3							
111.01	Vitamin C, Ascorbic Acid, LC (mkg/kg (ppm))	1	1	14.60							

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112.01	Pyridoxine, LC (µg / g)	1	1	1.985							
113.01	Folic Acid, Micro (mg / kg (ppm))	1	1	0.9130							
114.01	Biotin, Microbiological (mg / kg (ppm))	1	1	0.2810							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	1	1	5.515							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	20.43							
120.00	Alanine, Post-col Ninhydrin Der (%)	24	23	1.117	0.0568	1.109	0.0398	0.0104	3.59%	0.0221	3.94%
120.02	Alanine, Post-col OPA Der (%)	1	1	1.167							
120.05	Alanine, Pre-col AQC Der (%)	8	8	1.093	0.0604	1.093	0.0685	0.0303	6.27%	0.0286	3.95%
120.99	Alanine, Miscellaneous (%)	1	1	1.995							
121.00	Arginine, Post-col Ninhydrin Der (%)	24	23	1.764	0.0789	1.763	0.0566	0.0148	3.21%	0.0250	3.67%
121.02	Arginine, Post-col OPA Der (%)	1	1	1.766							
121.05	Arginine, Pre-col AQC Der (%)	8	7	1.708	0.1405	1.708	0.1593	0.0753	9.33%	0.0176	3.69%
121.99	Arginine, Miscellaneous (%)	1	1	0.5550							
122.00	Aspartic, Post-col Ninhydrin Der (%)	24	23	1.701	0.0651	1.696	0.0462	0.0120	2.72%	0.0270	3.69%
122.02	Aspartic, Post-col OPA Der (%)	1	1	1.737							
122.05	Aspartic, Pre-col AQC Der (%)	8	8	1.727	0.1686	1.720	0.1742	0.0770	10.13%	0.0330	3.69%
122.99	Aspartic, Miscellaneous (%)	1	1	2.045							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	24	23	0.3297	0.0434	0.3266	0.0353	0.0092	10.80%	0.0096	4.73%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.3325							
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	7	6	0.3095	0.0439	0.3129	0.0416	0.0212	13.28%	0.0133	4.76%
124.99	Cysteine/Cystine, Miscellaneous (%)	1	1	0.6950							
125.00	Glutamic, Post-col Ninhydrin Der (%)	24	22	3.754	0.1991	3.740	0.1908	0.0509	5.10%	0.0481	3.28%
125.02	Glutamic, Post-col OPA Der (%)	1	1	3.787							
125.05	Glutamic, Pre-col AQC Der (%)	8	8	3.658	0.2465	3.658	0.2795	0.1235	7.64%	0.0471	3.29%
125.99	Glutamic, Miscellaneous (%)	1	1	5.685							
126.00	Glycine, Post-col Ninhydrin Der (%)	24	23	1.263	0.0763	1.250	0.0446	0.0116	3.57%	0.0193	3.87%
126.02	Glycine, Post-col OPA Der (%)	1	1	1.255							
126.05	Glycine, Pre-col AQC Der (%)	8	8	1.205	0.0650	1.205	0.0738	0.0326	6.12%	0.0396	3.89%
126.99	Glycine, Miscellaneous (%)	1	1	1.070							
127.00	Histidine, Post-col Ninhydrin Der (%)	24	23	0.5415	0.0278	0.5407	0.0295	0.0077	5.46%	0.0104	4.39%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.5285							
127.05	Histidine, Pre-col AQC Der (%)	8	7	0.5049	0.0362	0.5049	0.0411	0.0194	8.13%	0.0103	4.43%
127.99	Histidine, Miscellaneous (%)	1	1	1.300							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	24	23	0.6569	0.0500	0.6569	0.0520	0.0136	7.92%	0.0132	4.26%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.6775							
128.05	Isoleucine, Pre-col AQC Der (%)	8	8	0.6498	0.0690	0.6571	0.0600	0.0265	9.13%	0.0118	4.26%
128.99	Isoleucine, Miscellaneous (%)	1	1	0.9050							
129.00	Leucine, Post-col Ninhydrin Der (%)	24	23	1.401	0.0522	1.400	0.0584	0.0152	4.17%	0.0203	3.80%
129.02	Leucine, Post-col OPA Der (%)	1	1	1.410							
129.05	Leucine, Pre-col AQC Der (%)	8	8	1.336	0.0829	1.336	0.0940	0.0415	7.03%	0.0103	3.83%

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129.99	Leucine, Miscellaneous (%)	1	1	0.6950							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	24	23	0.8636	0.0638	0.8629	0.0485	0.0126	5.62%	0.0170	4.09%
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.8630							
130.05	L-Lysine, Pre-col AQC Der (%)	8	8	0.8460	0.0502	0.8545	0.0345	0.0152	4.04%	0.0188	4.10%
130.99	L-Lysine, Miscellaneous (%)	1	1	1.070							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	24	23	0.2790	0.0299	0.2791	0.0294	0.0077	10.55%	0.0112	4.85%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.2770							
131.05	Methionine, PAO Pre-col AQC Der (%)	8	8	0.2838	0.0617	0.2774	0.0542	0.0240	19.54%	0.0144	4.85%
131.99	Methionine, Miscellaneous (%)	1	1	1.435							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	24	23	0.9686	0.0503	0.9645	0.0470	0.0123	4.88%	0.0156	4.02%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.9610							
132.05	Phenylalanine, Pre-col AQC Der (%)	8	8	0.9147	0.0616	0.9147	0.0699	0.0309	7.64%	0.0114	4.05%
132.99	Phenylalanine, Miscellaneous (%)	1	1	0.8400							
133.00	Proline, Post-col Ninhydrin Der (%)	24	23	1.257	0.1728	1.230	0.1047	0.0273	8.52%	0.0314	3.88%
133.05	Proline, Pre-col AQC Der (%)	8	7	1.215	0.0687	1.215	0.0779	0.0368	6.41%	0.0190	3.88%
133.99	Proline, Miscellaneous (%)	1	1	1.335							
134.00	Serine, Post-col Ninhydrin Der (%)	24	23	0.9114	0.0557	0.9027	0.0341	0.0089	3.77%	0.0157	4.06%
134.02	Serine, Post-col OPA Der (%)	1	1	0.8605							
134.05	Serine, Pre-col AQC Der (%)	8	8	0.9228	0.0621	0.9145	0.0495	0.0219	5.41%	0.0103	4.05%
134.99	Serine, Miscellaneous (%)	1	1	2.035							
135.00	Threonine, Post-col Ninhydrin Der (%)	24	23	0.7141	0.0503	0.7087	0.0383	0.0100	5.40%	0.0141	4.21%
135.02	Threonine, Post-col OPA Der (%)	1	1	0.7085							
135.05	Threonine, Pre-col AQC Der (%)	8	8	0.6714	0.0562	0.6714	0.0637	0.0281	9.49%	0.0154	4.25%
135.99	Threonine, Miscellaneous (%)	1	1	1.315							
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	8	7	0.2149	0.0248	0.2149	0.0281	0.0133	13.06%	0.0078	5.04%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	3	3	0.2152	0.0223	0.2152	0.0223	0.0161	10.37%	0.0030	5.04%
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.2230							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	6	6	0.2255	0.0122	0.2215	0.0026	0.0013	1.18%	0.0020	5.02%
136.05	Tryptophan, Pre-col AQC Der (%)	2	2	0.3763	0.2740						
136.99	Tryptophan, Miscellaneous (%)	2	2	0.2275	0.0248						
137.00	Tyrosine, Post-col Ninhydrin Der (%)	18	16	0.5940	0.1268	0.6056	0.0890	0.0278	14.70%	0.0096	4.31%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.5795							
137.05	Tyrosine, Pre-col AQC Der (%)	7	7	0.6149	0.0784	0.6149	0.0889	0.0420	14.45%	0.0176	4.30%
137.99	Tyrosine, Miscellaneous (%)	1	1	0.6050							
138.00	Valine, Post-col Ninhydrin Der (%)	24	23	0.9100	0.0609	0.9125	0.0593	0.0155	6.50%	0.0159	4.06%
138.02	Valine, Post-col OPA Der (%)	1	1	1.018							
138.05	Valine, Pre-col AQC Der (%)	8	8	0.8906	0.1055	0.8906	0.1197	0.0529	13.44%	0.0198	4.07%
138.99	Valine, Miscellaneous (%)	1	1	0.6600							
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.1095	0.1068						
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							

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139.05	Taurine, Pre-col AQC Der (%)	2	1	0.0605							
139.99	Taurine, Miscellaneous (%)	2	2	0.1400	0.1131						
160.99	Fructose, Miscellaneous (%)	4	3	0.2200	0.0868	0.2200	0.0868	0.0626	39.43%	0.0227	5.02%
161.99	Galactose, Miscellaneous (%)	1		0.0000							
162.99	Glucose, Miscellaneous (%)	4	3	0.1553	0.0170	0.1553	0.0170	0.0151	10.97%	0.0360	5.29%
163.99	Lactose, Miscellaneous (%)	4									
164.99	Maltose, Miscellaneous (%)	3									
165.99	Sucrose, Miscellaneous (%)	4	3	0.6047	0.0698	0.6047	0.0698	0.0504	11.54%	0.0160	4.31%
166.99	Raffinose, Miscellaneous (%)	3	3	0.8318	0.3074	0.8318	0.3074	0.2219	36.96%	0.0257	4.11%
167.99	Stachyose, Miscellaneous (%)	3	3	0.1972	0.0571	0.1972	0.0571	0.0412	28.95%	0.0110	5.11%
365.00	Monensin, Plate (mg/kg (ppm))	3	3	121.3	18.44	121.3	18.44	16.30	15.21%	2.127	7.77%
365.02	Monensin, LC (mg/kg (ppm))	5	5	103.9	9.971	103.9	9.971	5.574	9.60%	1.732	7.95%
365.03	Monensin, LC-PCD (mg/kg (ppm))	5	5	116.4	3.628	116.4	3.628	2.028	3.12%	4.975	7.82%
365.04	Monensin, LC-MS (mg/kg (ppm))	2	2	111.6	5.018						
365.05	Monensin, LC-MS/MS (mg/kg (ppm))	6	6	141.5	21.65	141.5	24.55	12.53	17.35%	17.05	7.59%
365.99	Monensin, Miscellaneous (mg/kg (ppm))	3	3	122.5	9.555	122.5	9.555	6.896	7.80%	7.433	7.76%
400.01	Water Activity, Aqualab chilled mirror (Units)	6	6	0.4993	0.0185	0.4953	0.0109	0.0056	2.21%	0.0017	
400.99	Water Activity, Miscellaneous (Units)	3	3	0.4943	0.0064	0.4943	0.0064	0.0046	1.28%	0.0020	
412.01	Starch, Dietary, Enzymatic-Colorimetric (%)	2	2	6.885	0.1202						
516.00	Arsenic, Total, AA, Hydride (mg / kg (ppm))	2	2	0.8865	0.1153						
516.43	Arsenic, Total, ICP, Microwave (mg / kg (ppm))	1	1	1.646							
516.52	Arsenic, Total, ICP-MS, Open vessel (mg / kg (ppm))	3	3	0.9890	0.1014	0.9890	0.1014	0.0732	10.25%	0.1320	16.02%
516.53	Arsenic, Total, ICP-MS, Microwave (mg / kg (ppm))	5	4	1.211	0.1894	1.211	0.1894	0.1184	15.63%	0.0195	15.54%
518.32	Cadmium, AAS, Open vessel (mg / kg (ppm))	1	1	0.4065							
518.41	Cadmium, ICP, Dry ash (mg / kg (ppm))	1	1	0.3550							
518.43	Cadmium, ICP, Microwave (mg / kg (ppm))	1	1	0.4055							
518.52	Cadmium, ICP-MS, Open vessel (mg / kg (ppm))	3	3	0.4388	0.0186	0.4388	0.0186	0.0134	4.24%	0.0143	18.11%
518.53	Cadmium, ICP-MS, Microwave (mg / kg (ppm))	6	5	0.4333	0.0550	0.4333	0.0550	0.0307	12.68%	0.0104	18.14%
520.41	Chromium, ICP, Dry ash (mg / kg (ppm))	1	1	27.91							
520.42	Chromium, ICP, Open vessel (mg / kg (ppm))	3	3	19.67	1.271	19.67	1.271	0.9176	6.46%	0.8687	10.22%
520.43	Chromium, ICP, Microwave (mg / kg (ppm))	2	2	18.66	5.705						
520.52	Chromium, ICP-MS, Open vessel (mg / kg (ppm))	1	1	11.55							
520.53	Chromium, ICP-MS, Microwave (mg / kg (ppm))	4	4	19.53	2.628	19.53	2.628	1.642	13.45%	1.215	10.23%
526.32	Lead, AAS, Open vessel (mg / kg (ppm))	1	1	0.5030							
526.41	Lead, ICP, Dry ash (mg / kg (ppm))	1	1	0.4505							
526.52	Lead, ICP-MS, Open vessel (mg / kg (ppm))	3	3	0.4875	0.0511	0.4875	0.0511	0.0451	10.47%	0.0397	17.82%
526.53	Lead, ICP-MS, Microwave (mg / kg (ppm))	5	5	0.5107	0.0554	0.5107	0.0554	0.0310	10.85%	0.0176	17.70%
529.99	Mercury, Miscellaneous (µg / kg (ppb))	1	1	6.559							
539.41	Nickel, ICP, Dry ash (mg / kg (ppm))	1	1	11.75							
539.42	Nickel, ICP, Open vessel (mg / kg (ppm))	1	1	7.410							

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO PT ffp - Robust sd	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Horwitz %RSD
539.52	Nickel, ICP-MS, Open vessel (mg / kg (ppm))	1	1	6.015							
539.53	Nickel, ICP-MS, Microwave (mg / kg (ppm))	2	2	9.027	0.8880						
702.00	Butyric Acid (4:0), Miscellaneous GC (%)	1	1	0.0017							
704.00	Caproic Acid (6:0) , Miscellaneous GC (%)	1	1	0.0055							
706.01	Caprylic acid (8:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0008							
708.01	Capric acid (10:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0005							
710.01	Lauric Acid (12:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0135							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	2	1	0.0300							
714.01	Myristic Acid (14:0) , Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0279							
714.99	Myristic Acid (14:0) , Miscellaneous (% (w/w))	2	2	0.0300	0.0141						
716.01	Palmitic Acid (16:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.8776							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	2	2	0.7950	0.1344						
718.01	Palmitoleic Acid (9c-16:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0366							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	2	1	0.0300							
722.01	Stearic Acid (18:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.2046							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.1900							
724.01	Oleic Acid (9c-18:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.9217							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	2	2	0.7950	0.1273						
726.01	Linoleic Acid (9c,12c-18:2), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	1.187							
726.02	Linoleic Acid (9c,12c-18:2), Direct Methylation by Acid-Alkali Hydrolysis & GC (%)	1	1	0.6450							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	2	2	1.103	0.2793						
728.01	alpha-Linolenic Acid (9c,12c,15c-18:3), Direct Methylation by Alkali Hydrolysis	1	1	0.0389							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	2	2	0.0450	0.0141						
730.01	Arachidic Acid (20:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0225							
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	1	1	0.0150							
732.01	Gondoic Acid (11c-20:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0273							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0100							
736.01	Arachidonic Acid (5c,8c,11c,14c-20:4), Direct Methylation by Alkali Hydrolysis	1		0.0000							
738.01	Mead Acid (11c,14c,17c-20:3), Direct Methylation by Alkali Hydrolysis & GC (%)	1		0.0000							
740.01	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Direct Methylation by Al	1		0.0000							
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (% (w/w))	1		0.0050							
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	2	1	0.0100							
744.01	Erucic Acid (13c-22:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		0.0000							
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1		0.0050							
746.01	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Direct Methylation	1		0.0000							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (%)	1		0.0050							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0100							
750.01	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Direct Methylation	1		0.0000							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (%)	1		0.0050							
752.01	Nervonic Acid (24:1) isomers, Direct Methylation by Alkali Hydrolysis & GC (%)	1		0.0000							

Test Material Code # 201831

Issue Date : 12/31/2018

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO PT ffp - Robust sd	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Horwitz %RSD
752.99	Nervonic Acid (24:1) isomers, Miscellaneous (% (w/w))	1		0.0050							
754.02	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Direct Methylation by Acid-#	1	1	0.0400							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w))	1	1	0.0600							
756.01	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Direct Methylation by Alkali	1	1	0.6450							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	1	1	1.315							
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.245							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	0.9900							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.385							
770.99	Total Fat (equivalent to NLEA), Miscellaneous (% (w/w))	1	1	3.815							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	2	2	3.133	0.7248						

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.

Animal Feed Scheme
Method Precision Report
Methods Reported: 98
Cattle Feed, Medicated
Labs Reporting: 199
Test Material Code # 201831
Issue Date : 12/31/2018

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 (%)	48	43	7.766	0.2953	0.2245	0.0656	0.2339	2.89%	0.84%	3.01%	3.566
001.99	Loss on Drying, Miscellaneous (%)	24	21	7.636	0.5644	0.4315	0.1001	0.4429	5.58%	1.30%	5.73%	4.423
002.01	Protein, Crude, Auto Kjel-Foss (%)	18	17	30.96	0.2906	0.2837	0.0887	0.2973	0.92%	0.29%	0.96%	3.352
002.05	Protein, Crude, Copper, Boric Acid (%)	34	29	31.11	0.4022	0.3424	0.1099	0.3596	1.10%	0.35%	1.16%	3.271
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	128	117	31.52	1.016	0.3555	0.1732	0.3955	1.13%	0.55%	1.26%	2.283
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	13	13	3.159	0.4030	0.4007	0.0602	0.4052	12.68%	1.91%	12.83%	6.726
003.06	Fat, Crude, Pet Ether (%)	20	17	2.875	0.4982	0.4091	0.0701	0.4151	14.00%	2.40%	14.21%	5.919
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	14	3.014	0.4634	0.4611	0.0657	0.4658	15.30%	2.18%	15.45%	7.086
003.10	Fat, Crude, Randall, Pet Ether (%)	34	30	2.529	0.4281	0.3080	0.0657	0.3149	12.58%	2.68%	12.87%	4.794
003.14	Fat, Crude, Ankom (%)	51	46	2.543	0.4149	0.3609	0.0858	0.3709	13.96%	3.32%	14.35%	4.324
004.00	Fiber, Crude, Asbestos Free (%)	17	16	9.742	0.9009	0.4962	0.1812	0.5282	5.19%	1.90%	5.53%	2.916
004.06	Fiber, Crude, Fibertec (%)	26	24	9.486	0.5170	0.4220	0.1454	0.4464	4.48%	1.54%	4.74%	3.069
004.07	Fiber, Crude, ANKOM (%)	64	59	10.02	1.153	0.9427	0.2893	0.9861	9.56%	2.93%	10.00%	3.409
005.00	Ash, 2h @ 600°C (%)	96	89	22.42	0.3575	0.2692	0.1347	0.3011	1.20%	0.60%	1.34%	2.235
005.05	Ash, 3h @ 550°C (%)	35	33	22.81	0.4239	0.3320	0.0933	0.3449	1.46%	0.41%	1.52%	3.698
005.99	Ash, Miscellaneous (%)	11	10	22.49	0.8846	0.5004	0.1729	0.5294	2.20%	0.76%	2.33%	3.062
008.02	Fiber, Acid Detergent, Crucible (%)	14	13	12.87	1.141	0.9312	0.1609	0.9450	7.13%	1.23%	7.24%	5.872
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	46	44	13.54	1.464	1.469	0.2588	1.492	10.85%	1.91%	11.01%	5.765
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	13	13	23.78	1.287	1.282	0.1553	1.292	5.39%	0.65%	5.43%	8.316
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	44	40	24.24	2.508	1.920	0.6094	2.015	8.04%	2.55%	8.44%	3.306
010.99	Moisture, Miscellaneous (%)	19	17	7.803	0.4856	0.4803	0.1008	0.4908	6.16%	1.29%	6.29%	4.866
011.01	Loss on Drying, 135°C 2hr (%)	64	60	8.970	0.5795	0.4605	0.1155	0.4748	5.11%	1.28%	5.26%	4.110
012.00	Starch, Polarimetric (Ewers) (%)	18	17	7.055	0.4500	0.3446	0.1327	0.3692	4.84%	1.86%	5.18%	2.782
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	11	10	8.169	3.134	0.9541	0.2443	0.9849	13.13%	3.36%	13.56%	4.031
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	18	18	3.924	0.6464	0.6426	0.0985	0.6501	16.38%	2.51%	16.57%	6.603
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	14	13	4.492	0.2692	0.2638	0.0762	0.2746	5.87%	1.70%	6.11%	3.602
019.00	Calcium, Ox-Mn04 Vol. (%)	11	10	4.473	0.1617	0.1609	0.0226	0.1624	3.60%	0.51%	3.63%	7.184
019.08	Calcium, EDTA (%)	14	12	4.661	0.4732	0.2759	0.0724	0.2852	5.95%	1.56%	6.15%	3.939
019.31	Calcium, AAS, Dry ash (%)	18	15	4.389	0.3413	0.2712	0.0545	0.2766	6.11%	1.23%	6.23%	5.079
019.41	Calcium, ICP, Dry ash (%)	28	25	4.471	0.3019	0.3026	0.0815	0.3134	6.77%	1.82%	7.01%	3.843
019.42	Calcium, ICP, Open vessel (%)	22	20	4.478	0.3210	0.2492	0.1111	0.2729	5.55%	2.47%	6.08%	2.455
019.43	Calcium, ICP, Microwave (%)	27	26	4.429	0.2299	0.1932	0.0798	0.2091	4.34%	1.79%	4.70%	2.621
022.31	Copper, AAS, Dry ash (mg / kg (ppm))	12	11	595.7	38.55	26.36	9.521	28.03	4.37%	1.58%	4.64%	2.944
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	23	22	591.7	71.97	51.52	18.37	54.69	8.56%	3.05%	9.08%	2.977
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	21	21	693.0	48.87	48.30	10.49	49.43	6.97%	1.51%	7.13%	4.710

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
022.43	Copper, ICP, Microwave (mg / kg (ppm))	25	20	673.4	71.26	38.76	12.82	40.83	5.72%	1.89%	6.03%	3.184
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	13	12	1,431	193.1	103.2	29.55	107.3	7.45%	2.13%	7.75%	3.632
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	21	20	1,273	126.7	126.7	25.19	129.1	9.99%	1.99%	10.18%	5.127
025.42	Iron, ICP, Open vessel (mg / kg (ppm))	16	15	1,150	300.6	212.2	31.69	214.6	17.62%	2.63%	17.81%	6.770
025.43	Iron, ICP, Microwave (mg / kg (ppm))	19	17	1,265	169.6	128.7	35.76	133.5	9.96%	2.77%	10.34%	3.734
027.31	Magnesium, AAS, Dry ash (%)	10	9	0.9280	0.0242	0.0223	0.0132	0.0259	2.41%	1.42%	2.79%	1.969
027.41	Magnesium, ICP, Dry ash (%)	24	24	0.9239	0.0588	0.0563	0.0237	0.0611	6.10%	2.56%	6.61%	2.582
027.42	Magnesium, ICP, Open vessel (%)	21	20	0.9383	0.0717	0.0473	0.0261	0.0540	5.10%	2.81%	5.82%	2.071
027.43	Magnesium, ICP, Microwave (%)	24	21	0.9200	0.1607	0.0608	0.0106	0.0617	6.63%	1.16%	6.73%	5.819
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	12	10	1,089	72.76	48.07	12.44	49.65	4.48%	1.16%	4.63%	3.992
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	22	21	1,041	72.58	58.21	21.18	61.94	5.54%	2.02%	5.90%	2.925
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	20	18	1,086	78.66	55.86	18.27	58.78	5.20%	1.70%	5.48%	3.217
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	24	22	1,078	67.57	67.02	21.22	70.30	6.21%	1.97%	6.51%	3.312
031.01	Phosphorus, Photometric (%)	43	39	2.143	0.2053	0.1057	0.0255	0.1087	4.95%	1.20%	5.09%	4.257
031.41	Phosphorus, ICP, Dry ash (%)	25	21	2.109	0.2386	0.1219	0.0335	0.1264	5.73%	1.57%	5.94%	3.778
031.42	Phosphorus, ICP, Open vessel (%)	20	17	2.123	0.1109	0.0906	0.0311	0.0958	4.24%	1.46%	4.48%	3.079
031.43	Phosphorus, ICP, Microwave (%)	25	23	2.182	0.1406	0.1151	0.0362	0.1206	5.31%	1.67%	5.57%	3.334
032.31	Potassium, AAS, Dry ash (%)	12	11	1.426	0.0959	0.0953	0.0144	0.0964	6.69%	1.01%	6.76%	6.693
032.41	Potassium, ICP, Dry ash (%)	24	22	1.432	0.1134	0.0882	0.0397	0.0967	6.25%	2.81%	6.85%	2.439
032.42	Potassium, ICP, Open vessel (%)	20	19	1.437	0.0539	0.0356	0.0225	0.0421	2.49%	1.58%	2.95%	1.867
032.43	Potassium, ICP, Microwave (%)	26	25	1.433	0.0777	0.0671	0.0184	0.0696	4.66%	1.27%	4.83%	3.788
033.00	Salt as chloride, Sol Cl (%)	24	21	4.714	0.3579	0.2472	0.0435	0.2510	5.24%	0.92%	5.32%	5.770
033.01	Salt as chloride, Poten Cl (%)	36	34	4.930	0.1406	0.0844	0.0598	0.1034	1.72%	1.22%	2.11%	1.731
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	11	11	10.23	1.114	1.095	0.2867	1.132	10.71%	2.80%	11.07%	3.949
035.31	Sodium, AAS, Dry ash (%)	13	12	1.706	0.0842	0.0830	0.0206	0.0855	4.87%	1.21%	5.01%	4.152
035.41	Sodium, ICP, Dry ash (%)	23	22	1.662	0.1359	0.1331	0.0390	0.1387	8.01%	2.34%	8.34%	3.558
035.42	Sodium, ICP, Open vessel (%)	17	15	1.715	0.1007	0.1018	0.0210	0.1040	5.95%	1.23%	6.07%	4.943
035.43	Sodium, ICP, Microwave (%)	21	20	1.650	0.3628	0.2381	0.0222	0.2391	13.92%	1.30%	13.98%	10.77
036.42	Sulfur, ICP, Open vessel (%)	19	17	0.6444	0.0443	0.0275	0.0155	0.0315	4.27%	2.41%	4.90%	2.034
036.43	Sulfur, ICP, Microwave (%)	11	10	0.6593	0.0745	0.0409	0.0100	0.0421	6.39%	1.56%	6.58%	4.217
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	13	12	1,371	122.9	121.5	23.15	123.7	8.80%	1.68%	8.96%	5.346
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	23	22	1,290	91.92	90.77	34.93	97.26	7.03%	2.71%	7.54%	2.784
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	19	17	1,392	102.7	71.93	16.43	73.78	5.23%	1.19%	5.36%	4.491
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	25	22	1,317	268.8	90.03	34.19	96.31	6.57%	2.50%	7.03%	2.817
106.02	Vitamin A, LC (KU / kg)	23	22	165.9	52.72	40.29	19.92	44.94	23.34%	11.54%	26.04%	2.256
109.02	Vitamin E, LC (IU / kg)	19	17	239.6	69.80	55.56	12.41	56.93	22.11%	4.94%	22.65%	4.588
120.00	Alanine, Post-col Ninhydrin Der (%)	24	21	1.117	0.0568	0.0295	0.0190	0.0351	2.68%	1.73%	3.18%	1.845
120.05	Alanine, Pre-col AQC Der (%)	8	8	1.093	0.0604	0.0566	0.0297	0.0640	5.18%	2.72%	5.86%	2.152
121.00	Arginine, Post-col Ninhydrin Der (%)	24	21	1.764	0.0789	0.0626	0.0208	0.0660	3.57%	1.19%	3.76%	3.170
122.00	Aspartic, Post-col Ninhydrin Der (%)	24	21	1.701	0.0651	0.0473	0.0222	0.0522	2.79%	1.31%	3.09%	2.352
122.05	Aspartic, Pre-col AQC Der (%)	8	8	1.727	0.1686	0.1672	0.0303	0.1699	9.68%	1.76%	9.84%	5.602
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	24	21	0.3297	0.0434	0.0357	0.0078	0.0366	11.04%	2.41%	11.30%	4.683
125.00	Glutamic, Post-col Ninhydrin Der (%)	24	20	3.754	0.1991	0.1669	0.0342	0.1703	4.47%	0.92%	4.56%	4.978

Test Material Code # 201831

Issue Date : 12/31/2018

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
125.05	Glutamic, Pre-col AQC Der (%)	8	8	3.658	0.2465	0.2442	0.0472	0.2487	6.68%	1.29%	6.80%	5.266
126.00	Glycine, Post-col Ninhydrin Der (%)	24	22	1.263	0.0763	0.0461	0.0180	0.0495	3.69%	1.44%	3.96%	2.750
126.05	Glycine, Pre-col AQC Der (%)	8	8	1.205	0.0650	0.0589	0.0389	0.0706	4.89%	3.23%	5.86%	1.816
127.00	Histidine, Post-col Ninhydrin Der (%)	24	23	0.5415	0.0278	0.0269	0.0098	0.0286	4.97%	1.80%	5.28%	2.932
128.00	Isoleucine, Post-col Ninhydrin Der (%)	24	23	0.6569	0.0500	0.0492	0.0129	0.0508	7.49%	1.96%	7.74%	3.940
128.05	Isoleucine, Pre-col AQC Der (%)	8	8	0.6498	0.0690	0.0686	0.0099	0.0693	10.56%	1.53%	10.67%	6.976
129.00	Leucine, Post-col Ninhydrin Der (%)	24	23	1.401	0.0522	0.0506	0.0184	0.0538	3.61%	1.31%	3.84%	2.932
129.05	Leucine, Pre-col AQC Der (%)	8	8	1.336	0.0829	0.0824	0.0119	0.0833	6.17%	0.89%	6.24%	6.992
130.00	L-Lysine, Post-col Ninhydrin Der (%)	24	20	0.8636	0.0638	0.0372	0.0147	0.0400	4.32%	1.71%	4.65%	2.717
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	24	21	0.2790	0.0299	0.0272	0.0073	0.0282	9.90%	2.66%	10.25%	3.855
131.05	Methionine, PAO Pre-col AQC Der (%)	8	8	0.2838	0.0617	0.0609	0.0141	0.0625	21.45%	4.96%	22.01%	4.442
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	24	21	0.9686	0.0503	0.0411	0.0137	0.0433	4.26%	1.42%	4.49%	3.163
132.05	Phenylalanine, Pre-col AQC Der (%)	8	8	0.9147	0.0616	0.0611	0.0115	0.0621	6.68%	1.25%	6.79%	5.423
133.00	Proline, Post-col Ninhydrin Der (%)	24	21	1.257	0.1728	0.0937	0.0186	0.0955	7.68%	1.53%	7.83%	5.130
134.00	Serine, Post-col Ninhydrin Der (%)	24	21	0.9114	0.0557	0.0395	0.0129	0.0416	4.38%	1.43%	4.61%	3.220
135.00	Threonine, Post-col Ninhydrin Der (%)	24	21	0.7141	0.0503	0.0331	0.0127	0.0354	4.67%	1.79%	5.00%	2.792
135.05	Threonine, Pre-col AQC Der (%)	8	8	0.6714	0.0562	0.0551	0.0157	0.0572	8.20%	2.34%	8.53%	3.649
137.00	Tyrosine, Post-col Ninhydrin Der (%)	18	14	0.5940	0.1268	0.0939	0.0067	0.0941	15.22%	1.08%	15.26%	14.09
138.00	Valine, Post-col Ninhydrin Der (%)	24	21	0.9100	0.0609	0.0530	0.0115	0.0542	5.79%	1.25%	5.92%	4.719
138.05	Valine, Pre-col AQC Der (%)	8	8	0.8906	0.1055	0.1046	0.0191	0.1064	11.75%	2.15%	11.94%	5.558

Notes: Precision Calculations provided for methods with 8 or more labs used in calculations.