



**AAFCO**  
Proficiency Testing Program



**Animal Feed Scheme**  
**Catfish Feed**  
**Test Material Code # 201928**

**Method Summary Report**  
(Precision Report Follows)

**# Labs Reporting: 191**  
**# Methods Reported: 382**  
**Issue Date : 09/30/2019**

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	0.2000							
001.00	Loss on Drying, Vac 95°C 5 hr (%)	3	3	7.448	0.3070	7.448	0.3070	0.1772	4.12%	0.0603	2.96%
001.03	Loss on Drying, Low temp. methods (%)	4	4	7.233	0.6105	7.233	0.6105	0.3053	8.44%	0.0513	2.97%
001.05	Loss on Drying, LECO (%)	3	3	7.410	0.1682	7.410	0.1682	0.0971	2.27%	0.0133	2.96%
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	48	47	7.450	0.3077	7.479	0.1931	0.0352	2.58%	0.0847	2.95%
001.99	Loss on Drying, Miscellaneous (%)	19	19	7.316	0.6902	7.386	0.6053	0.1736	8.20%	0.2300	2.96%
002.01	Protein, Crude, Auto Kjell-Foss (%)	14	14	32.75	0.3104	32.75	0.2434	0.0813	0.74%	0.1501	1.75%
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	3	3	32.67	0.0551	32.67	0.0551	0.0318	0.17%	0.1830	1.75%
002.03	Protein, Crude, Hach Method (%)	2	2	33.70	1.286						
002.04	Protein, Crude, Copper Catalyst (%)	3	3	32.29	0.4810	32.29	0.4810	0.2777	1.49%	0.4400	1.76%
002.05	Protein, Crude, Copper, Boric Acid (%)	34	34	32.71	0.6063	32.62	0.2876	0.0616	0.88%	0.1351	1.75%
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	128	124	32.97	0.3713	32.97	0.2396	0.0269	0.73%	0.1942	1.74%
002.08	Protein, Crude, Cu/Ti (%)	2	2	32.58	0.1804						
002.09	Protein, Crude, Selenium Catalyst (%)	1	1	32.38							
002.11	Protein, Crude, NIR (%)	7	7	32.37	2.198	32.36	2.492	1.177	7.70%	0.0370	1.76%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	9	8	4.264	0.3474	4.196	0.2119	0.0936	5.05%	0.0775	3.22%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	2	2	4.543	0.1379						
003.06	Fat, Crude, Pet Ether (%)	18	17	4.167	0.0959	4.167	0.1081	0.0328	2.59%	0.0823	3.23%
003.07	Fat, Crude, Aqueous Extraction (%)	1	1	4.100							
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	14	4.378	0.6092	4.259	0.2874	0.0960	6.75%	0.1499	3.22%
003.10	Fat, Crude, Randall, Pet Ether (%)	36	35	3.997	0.2514	3.987	0.1964	0.0415	4.92%	0.1037	3.25%
003.11	Fat, Crude, NIR (%)	7	7	4.824	0.8598	4.824	0.9750	0.4607	20.21%	0.0346	3.16%
003.12	Fat, Crude, Hexane Ext (%)	4	3	3.890	0.6439	3.890	0.6439	0.4553	16.55%	0.0208	3.26%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	6	6	4.078	0.0569	4.078	0.0646	0.0329	1.58%	0.0783	3.24%
003.14	Fat, Crude, Ankom (%)	44	41	4.013	0.2315	4.018	0.2303	0.0449	5.73%	0.0858	3.24%
003.99	Fat, Crude, Miscellaneous (%)	4	3	5.187	0.9650	5.187	0.9650	0.5572	18.61%	0.0533	3.12%
004.00	Fiber, Crude, Asbestos Free (%)	12	12	7.261	1.010	7.096	0.6579	0.2374	9.27%	0.1745	2.98%
004.01	Fiber, Crude, Sing Filt (%)	1	1	6.400							
004.03	Fiber, Crude, Fritted Glass (%)	5	5	7.154	1.164	7.154	1.164	0.5204	16.27%	0.1760	2.97%
004.06	Fiber, Crude, Fibertec (%)	19	19	7.154	0.4434	7.154	0.5028	0.1442	7.03%	0.2197	2.97%

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004.07	Fiber, Crude, ANKOM (%)	58	58	6.866	0.7233	6.843	0.7071	0.1161	10.33%	0.1994	2.99%
004.11	Fiber, Crude, NIR (%)	5	5	6.424	2.617	6.424	2.617	1.170	40.73%	0.1899	3.02%
004.99	Fiber, Crude, Miscellaneous (%)	1	1	5.720							
005.00	Ash, 2h @ 600°C (%)	95	92	6.233	0.1445	6.227	0.0883	0.0115	1.42%	0.0526	3.04%
005.02	Ash, LECO (%)	1	1	6.385							
005.05	Ash, 3h @ 550°C (%)	36	35	6.301	0.0729	6.300	0.0807	0.0170	1.28%	0.0392	3.03%
005.11	Ash, NIR (%)	4	4	6.551	2.380	6.551	2.380	1.190	36.32%	0.1249	3.01%
005.99	Ash, Miscellaneous (%)	9	8	6.267	0.0559	6.267	0.0634	0.0280	1.01%	0.0450	3.03%
006.00	Total Sugars, As sucrose (%)	2	2	7.295	1.280						
006.99	Total Sugars, Miscellaneous (%)	2	2	5.365	1.605						
008.02	Fiber, Acid Detergent, Crucible (%)	8	8	10.34	0.6995	10.34	0.7932	0.3506	7.67%	0.2375	2.81%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	10.35							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	38	37	10.23	1.142	10.14	1.064	0.2186	10.49%	0.4196	2.82%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	1	1	9.675							
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	21.11							
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	7	6	23.25	1.898	23.07	1.733	0.8842	7.51%	0.4350	2.08%
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	39	38	22.80	2.671	22.52	2.238	0.4539	9.94%	0.5172	2.11%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	2	2	24.31	2.778						
010.03	Moisture, Karl-Fischer (%)	2	2	6.968	0.6682						
010.11	Moisture, NIR (%)	5	4	8.694	1.052	8.694	1.052	0.5259	12.10%	0.0150	2.89%
010.99	Moisture, Miscellaneous (%)	16	16	7.735	0.6142	7.640	0.3822	0.1194	5.00%	0.1681	2.95%
011.01	Loss on Drying, 135°C 2hr (%)	67	66	8.296	0.3548	8.308	0.3403	0.0524	4.10%	0.0829	2.91%
011.02	Loss on Drying, 130°C for 2 hours (%)	1	1	7.890							
011.99	Loss on Drying, High Temp. Methods Miscellaneous (%)	2	2	8.710	0.7213						
012.00	Starch, Polarimetric (Ewers) (%)	16	16	12.91	0.8760	12.84	0.8003	0.2501	6.23%	0.1341	2.72%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	10.55	2.248	10.60	2.427	0.9593	22.89%	0.4783	2.80%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	4	3	11.39	0.5807	11.39	0.5807	0.4106	5.10%	0.0521	2.77%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	4	4	10.08	0.6831	10.08	0.6831	0.3416	6.78%	0.2650	2.82%
012.11	Starch, NIR (%)	3	3	13.20	1.216	13.20	1.216	0.7018	9.21%	0.2915	2.71%
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	17	17	6.195	1.316	6.424	0.7160	0.2171	11.15%	0.1602	3.02%
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	22	21	6.884	0.5122	6.897	0.5206	0.1420	7.55%	0.2184	2.99%
013.08	Fat, Base Pretreat, Roese-Gottlieb Modified (%)	1	1	4.668							
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	7	7	5.259	1.130	5.259	1.281	0.6051	24.36%	0.1558	3.12%
013.12	Fat, Acid Pretreat, NIR- Acid Hydrolysis (%)	1	1	9.228							
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	10	10	7.259	0.8085	7.269	0.8943	0.3535	12.30%	0.1822	2.97%
015.41	Aluminum, ICP, Dry ash (mg / kg (ppm))	5	5	152.6	10.10	152.6	10.10	4.516	6.62%	4.911	7.51%
015.42	Aluminum, ICP, Open vessel (mg / kg (ppm))	1	1	157.6							
015.43	Aluminum, ICP, Microwave (mg / kg (ppm))	7	6	152.7	15.32	152.7	17.37	8.865	11.38%	2.891	7.51%
015.52	Aluminum, ICP-MS, Open vessel (mg / kg (ppm))	1	1	100.5							
015.53	Aluminum, ICP-MS, Microwave (mg / kg (ppm))	1	1	172.5							

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017.41	Boron, ICP, Dry ash (mg / kg (ppm))	6	6	15.45	2.281	15.45	2.587	1.320	16.74%	0.2487	10.59%
017.42	Boron, ICP, Open vessel (mg / kg (ppm))	5	5	18.53	1.399	18.53	1.399	0.6258	7.55%	0.8414	10.31%
017.43	Boron, ICP, Microwave (mg / kg (ppm))	5	5	19.39	1.088	19.39	1.088	0.4865	5.61%	0.3624	10.24%
017.44	Boron, ICP, Dry ash (mg / kg (ppm))	1	1	17.92							
019.00	Calcium, Ox-Mn04 Vol. (%)	8	8	0.4386	0.1077	0.4198	0.0726	0.0321	17.29%	0.0114	4.56%
019.02	Calcium, Hach Method (%)	2	2	1.324	1.098						
019.03	Calcium, Semiauto (Autoanalyzer) (%)	1	1	0.5053							
019.08	Calcium, EDTA (%)	10	10	0.7025	0.6872	0.4609	0.0836	0.0331	18.15%	0.0164	4.49%
019.31	Calcium, AAS, Dry ash (%)	23	22	0.4134	0.0296	0.4140	0.0287	0.0077	6.94%	0.0139	4.57%
019.32	Calcium, AAS, Open vessel (%)	1	1	0.3850							
019.41	Calcium, ICP, Dry ash (%)	25	25	0.4190	0.0360	0.4144	0.0244	0.0061	5.89%	0.0109	4.57%
019.42	Calcium, ICP, Open vessel (%)	19	19	0.4282	0.0566	0.4215	0.0352	0.0101	8.35%	0.0142	4.56%
019.43	Calcium, ICP, Microwave (%)	21	20	0.4240	0.0297	0.4243	0.0319	0.0089	7.52%	0.0112	4.55%
019.52	Calcium, ICP-MS, Open vessel (%)	2	2	0.3954	0.0040						
019.53	Calcium, ICP-MS, Microwave (%)	4	4	0.4045	0.0358	0.4045	0.0358	0.0179	8.85%	0.0200	4.58%
019.99	Calcium, Miscellaneous (%)	5	5	0.4410	0.0266	0.4410	0.0266	0.0119	6.02%	0.0100	4.52%
021.31	Cobalt, AAS, Dry ash (mg / kg (ppm))	3	3	1.192	0.1100	1.192	0.1100	0.0635	9.23%	0.0700	15.58%
021.41	Cobalt, ICP, Dry ash (mg / kg (ppm))	4	4	0.9896	0.6408	0.9896	0.6408	0.3204	64.75%	0.0544	16.02%
021.42	Cobalt, ICP, Open vessel (mg / kg (ppm))	3	3	0.9498	0.1527	0.9498	0.1527	0.0882	16.08%	0.2830	16.12%
021.43	Cobalt, ICP, Microwave (mg / kg (ppm))	5	5	1.293	0.2696	1.293	0.2696	0.1206	20.85%	0.1188	15.39%
021.52	Cobalt, ICP-MS, Open vessel (mg / kg (ppm))	3	3	0.3253	0.0378	0.3253	0.0378	0.0218	11.63%	0.0193	18.94%
021.53	Cobalt, ICP-MS, Microwave (mg / kg (ppm))	5	5	0.8307	0.3927	0.8307	0.3927	0.1756	47.28%	0.0527	16.45%
022.31	Copper, AAS, Dry ash (mg / kg (ppm))	13	13	12.66	2.431	12.81	2.424	0.8404	18.92%	0.4622	10.90%
022.32	Copper, AAS, Open vessel (mg / kg (ppm))	2	2	11.20	2.265						
022.33	Copper, AAS, Microwave (mg / kg (ppm))	2	2	13.58	0.2521						
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	22	20	14.23	3.451	13.53	1.494	0.4176	11.05%	0.7862	10.81%
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	20	18	13.08	0.9444	13.07	0.9761	0.2876	7.47%	0.3764	10.87%
022.43	Copper, ICP, Microwave (mg / kg (ppm))	22	21	12.91	1.325	13.05	0.9881	0.2695	7.57%	0.4923	10.87%
022.44	Copper, ICP, Dry ash (mg / kg (ppm))	1	1	17.98							
022.51	Copper, ICP-MS, Dry ash (mg / kg (ppm))	1	1	14.03							
022.52	Copper, ICP-MS, Open vessel (mg / kg (ppm))	2	2	13.31	1.637						
022.53	Copper, ICP-MS, Microwave (mg / kg (ppm))	4	4	12.48	0.6218	12.48	0.6218	0.3109	4.98%	0.4100	10.94%
022.99	Copper, Miscellaneous (mg / kg (ppm))	4	4	11.76	0.8616	11.76	0.8616	0.4308	7.32%	0.5750	11.04%
024.99	Iodine, Miscellaneous (mg / kg (ppm))	1	1	0.3500							
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	18	17	346.3	292.5	272.0	66.65	20.21	24.50%	7.067	6.88%
025.32	Iron, AAS, Open vessel (mg / kg (ppm))	1	1	156.1							
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	22	22	254.7	19.37	255.4	19.56	5.214	7.66%	9.173	6.95%
025.42	Iron, ICP, Open vessel (mg / kg (ppm))	17	17	257.5	34.69	256.9	37.12	11.25	14.45%	9.103	6.94%
025.43	Iron, ICP, Microwave (mg / kg (ppm))	19	18	259.4	22.66	261.8	19.95	5.877	7.62%	5.432	6.92%
025.51	Iron, ICP-MS, Dry ash (mg / kg (ppm))	1	1	260.1							

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025.52	Iron, ICP-MS, Open vessel (mg / kg (ppm))	2	2	187.7	76.88						
025.53	Iron, ICP-MS, Microwave (mg / kg (ppm))	3	3	227.2	12.64	227.2	12.64	7.298	5.56%	15.42	7.07%
025.99	Iron, Miscellaneous (mg / kg (ppm))	3	3	262.5	13.14	262.5	13.14	7.588	5.01%	13.00	6.92%
027.31	Magnesium, AAS, Dry ash (%)	10	10	0.3481	0.0802	0.3668	0.0332	0.0131	9.06%	0.0034	4.65%
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.3200							
027.33	Magnesium, AAS, Microwave (%)	1	1	0.3845							
027.41	Magnesium, ICP, Dry ash (%)	20	20	0.3830	0.0186	0.3827	0.0204	0.0057	5.33%	0.0052	4.62%
027.42	Magnesium, ICP, Open vessel (%)	17	17	0.3845	0.0207	0.3842	0.0196	0.0060	5.12%	0.0122	4.62%
027.43	Magnesium, ICP, Microwave (%)	19	18	0.3752	0.0191	0.3746	0.0184	0.0054	4.90%	0.0031	4.64%
027.51	Magnesium, ICP-MS, Dry ash (%)	1	1	0.3945							
027.52	Magnesium, ICP-MS, Open vessel (%)	2	2	0.3672	0.0100						
027.53	Magnesium, ICP-MS, Microwave (%)	3	2	0.3910	0.0141	0.3910	0.0141			0.0050	4.61%
027.99	Magnesium, Miscellaneous (%)	3	3	0.4067	0.0176	0.4067	0.0176	0.0101	4.32%	0.0067	4.58%
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	14	14	78.88	19.04	75.64	6.052	2.022	8.00%	0.8807	8.34%
028.32	Manganese, AAS, Open vessel (mg / kg (ppm))	2	2	66.80	18.67						
028.33	Manganese, AAS, Microwave (mg / kg (ppm))	1	1	63.00							
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	20	19	75.49	5.275	75.38	5.124	1.469	6.80%	1.731	8.35%
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	19	19	76.75	5.788	77.24	5.005	1.435	6.48%	2.321	8.32%
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	21	20	77.62	4.882	77.71	5.189	1.450	6.68%	1.472	8.31%
028.44	Manganese, ICP, Dry ash (mg / kg (ppm))	1	1	77.74							
028.52	Manganese, ICP-MS, Open vessel (mg / kg (ppm))	2	2	81.49	11.58						
028.53	Manganese, ICP-MS, Microwave (mg / kg (ppm))	5	4	69.78	8.858	69.78	8.858	4.429	12.69%	1.318	8.44%
028.99	Manganese, Miscellaneous (mg / kg (ppm))	4	4	76.94	4.120	76.94	4.120	2.060	5.36%	1.275	8.32%
031.01	Phosphorus, Photometric (%)	40	40	1.068	0.0868	1.085	0.0382	0.0076	3.52%	0.0236	3.95%
031.03	Phosphorus, Autoanalyzer (%)	3	3	1.105	0.0262	1.105	0.0262	0.0185	2.37%	0.0336	3.94%
031.06	Phosphorus, Hach Method (%)	1	1	1.130							
031.41	Phosphorus, ICP, Dry ash (%)	23	22	1.076	0.0553	1.074	0.0523	0.0139	4.87%	0.0189	3.96%
031.42	Phosphorus, ICP, Open vessel (%)	19	18	1.094	0.0860	1.091	0.0562	0.0166	5.15%	0.0216	3.95%
031.43	Phosphorus, ICP, Microwave (%)	19	19	1.105	0.0657	1.097	0.0402	0.0115	3.66%	0.0180	3.94%
031.51	Phosphorus, ICP-MS, Dry ash (%)	1	1	1.025							
031.52	Phosphorus, ICP-MS, Open vessel (%)	2	2	0.9863	0.0294						
031.53	Phosphorus, ICP-MS, Microwave (%)	4	4	1.120	0.0402	1.120	0.0402	0.0201	3.59%	0.0450	3.93%
031.99	Phosphorus, Miscellaneous (%)	4	4	1.124	0.1289	1.124	0.1289	0.0645	11.47%	0.0075	3.93%
032.02	Potassium, Flame Emission (%)	1	1	1.505							
032.31	Potassium, AAS, Dry ash (%)	13	13	1.517	0.1432	1.486	0.0842	0.0292	5.66%	0.0373	3.77%
032.32	Potassium, AAS, Open vessel (%)	2	2	1.343	0.2581						
032.41	Potassium, ICP, Dry ash (%)	21	20	1.455	0.0950	1.464	0.0823	0.0230	5.62%	0.0326	3.78%
032.42	Potassium, ICP, Open vessel (%)	16	15	1.470	0.0597	1.465	0.0558	0.0180	3.81%	0.0292	3.78%
032.43	Potassium, ICP, Microwave (%)	19	19	1.444	0.1097	1.446	0.1096	0.0314	7.58%	0.0322	3.78%
032.51	Potassium, ICP-MS, Dry ash (%)	1	1	1.385							

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032.52	Potassium, ICP-MS, Open vessel (%)	2	2	1.315	0.0849						
032.53	Potassium, ICP-MS, Microwave (%)	4	4	1.498	0.0087	1.498	0.0087	0.0043	0.58%	0.0700	3.76%
032.99	Potassium, Miscellaneous (%)	3	3	1.495	0.0265	1.495	0.0265	0.0153	1.77%	0.0433	3.76%
033.00	Salt as chloride, Sol Cl (%)	14	14	0.1291	0.0266	0.1281	0.0270	0.0090	21.05%	0.0074	5.45%
033.01	Salt as chloride, Poten Cl (%)	20	18	0.1339	0.0239	0.1333	0.0184	0.0054	13.77%	0.0078	5.42%
033.03	Salt as chloride, Quantab (%)	2	1	0.0650							
033.05	Salt as chloride, Ion Sel Electrode (%)	3	3	0.1850	0.0973	0.1850	0.0973	0.0688	52.62%	0.0100	5.16%
033.99	Salt, Miscellaneous (%)	7	7	0.1899	0.0656	0.1899	0.0744	0.0351	39.17%	0.0050	5.14%
034.01	Selenium, Fluor (mg / kg (ppm))	1	1	0.3722							
034.04	Selenium, AA, Hydride (mg / kg (ppm))	3	3	0.3119	0.0145	0.3119	0.0145	0.0083	4.64%	0.0271	19.06%
034.41	Selenium, ICP, Dry ash (mg / kg (ppm))	3	3	0.7862	0.7785	0.7862	0.7785	0.5505	99.02%	0.2543	16.59%
034.43	Selenium, ICP, Microwave (mg / kg (ppm))	1	1	1.310							
034.52	Selenium, ICP-MS, Open vessel (mg / kg (ppm))	3	3	0.3704	0.0317	0.3704	0.0317	0.0183	8.55%	0.0237	18.58%
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	10	9	0.4026	0.0842	0.4026	0.0955	0.0398	23.73%	0.0629	18.34%
034.99	Selenium, Miscellaneous (mg / kg (ppm))	1	1	1.395							
035.01	Sodium, Ion-selective electrode (%)	1	1	0.1365							
035.02	Sodium, Em Spect (%)	1	1	0.1100							
035.05	Sodium, Flame Emission (%)	4	4	0.1125	0.0132	0.1125	0.0132	0.0066	11.76%	0.0035	5.56%
035.31	Sodium, AAS, Dry ash (%)	19	18	0.1227	0.0363	0.1148	0.0188	0.0055	16.36%	0.0037	5.54%
035.32	Sodium, AAS, Open vessel (%)	1	1	0.0850							
035.41	Sodium, ICP, Dry ash (%)	20	20	0.1063	0.0119	0.1048	0.0070	0.0019	6.64%	0.0057	5.62%
035.42	Sodium, ICP, Open vessel (%)	13	13	0.1035	0.0102	0.1024	0.0090	0.0031	8.83%	0.0045	5.64%
035.43	Sodium, ICP, Microwave (%)	20	20	0.1093	0.0244	0.1057	0.0131	0.0037	12.41%	0.0040	5.61%
035.51	Sodium, ICP-MS, Dry ash (%)	1	1	0.1015							
035.52	Sodium, ICP-MS, Open vessel (%)	2	2	0.1043	0.0058						
035.53	Sodium, ICP-MS, Microwave (%)	4	3	0.3942	0.5035	0.3942	0.5035	0.3560	127.73%	0.0083	4.60%
035.99	Sodium, Miscellaneous (%)	4	3	0.1050	0.0050	0.1050	0.0050	0.0035	4.76%	0.0033	5.61%
036.04	Sulfur, LECO (%)	3	3	0.4035	0.0318	0.4035	0.0318	0.0184	7.89%	0.0117	4.59%
036.42	Sulfur, ICP, Open vessel (%)	20	20	0.3492	0.0547	0.3575	0.0335	0.0094	9.36%	0.0100	4.67%
036.43	Sulfur, ICP, Microwave (%)	12	11	0.3696	0.0226	0.3705	0.0235	0.0089	6.34%	0.0047	4.64%
036.52	Sulfur, ICP-MS, Open vessel (%)	2	2	0.3556	0.0014						
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.3805							
036.99	Sulfur, Miscellaneous (%)	1	1	0.3600							
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	17	16	98.49	4.371	98.44	4.852	1.516	4.93%	1.999	8.02%
037.32	Zinc, AAS, Open vessel (mg / kg (ppm))	3	3	81.20	36.19	81.20	36.19	20.90	44.57%	31.18	8.25%
037.33	Zinc, AAS, Microwave (mg / kg (ppm))	4	3	100.7	3.571	100.7	3.571	2.062	3.55%	0.6053	7.99%
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	22	21	101.3	8.111	100.7	7.392	2.016	7.34%	4.240	7.99%
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	19	19	104.7	25.27	101.2	11.91	3.415	11.76%	3.909	7.98%
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	22	21	103.0	10.04	103.1	10.28	2.804	9.97%	3.489	7.96%
037.44	Zinc, ICP, Dry ash (mg / kg (ppm))	1	1	97.73							

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037.51	Zinc, ICP-MS, Dry ash (mg / kg (ppm))	1	1	99.54							
037.52	Zinc, ICP-MS, Open vessel (mg / kg (ppm))	2	2	134.5	28.32						
037.53	Zinc, ICP-MS, Microwave (mg / kg (ppm))	4	4	99.11	4.860	99.11	4.860	2.430	4.90%	2.615	8.01%
037.99	Zinc, Miscellaneous (mg / kg (ppm))	4	3	100.5	12.59	100.5	12.59	8.901	12.53%	0.7333	7.99%
038.41	Molybdenum, ICP, Dry ash (mg / kg (ppm))	3	3	1.695	0.2553	1.695	0.2553	0.1474	15.06%	0.1207	14.78%
038.42	Molybdenum, ICP, Open vessel (mg / kg (ppm))	3	3	1.965	0.4432	1.965	0.4432	0.2559	22.55%	0.2190	14.45%
038.43	Molybdenum, ICP, Microwave (mg / kg (ppm))	7	6	1.829	0.1763	1.791	0.1044	0.0533	5.83%	0.0892	14.65%
038.52	Molybdenum, ICP-MS, Open vessel (mg / kg (ppm))	2	2	1.525	0.0495						
038.53	Molybdenum, ICP-MS, Microwave (mg / kg (ppm))	3	3	1.858	0.1007	1.858	0.1007	0.0582	5.42%	0.0664	14.57%
040.42	Barium, ICP, Open vessel (mg / kg (ppm))	1	1	15.97							
040.53	Barium, ICP-MS, Microwave (mg / kg (ppm))	1	1	14.18							
041.53	Vanadium, ICP-MS, Microwave (mg / kg (ppm))	1	1	1.230							
042.00	Chloride, Titrimetric (%)	1	1	0.0790							
102.01	Niacin, Microbiological (mg / kg (ppm))	1	1	111.5							
103.01	Pantothenic Acid, Microbiological (mg / kg (ppm))	1	1	13.25							
104.00	Riboflavin, Fluorometric (mg / kg (ppm))	1	1	3.780							
104.03	Riboflavin, LC (mg / kg (ppm))	3	3	2.745	1.372	2.745	1.372	0.7918	49.96%	0.1300	13.74%
105.00	Thiamine, LC (mg / kg (ppm))	3	3	5.975	2.662	5.975	2.662	1.537	44.56%	0.3367	12.22%
105.01	Thiamine, Fluorometer (mg / kg (ppm))	1	1	6.230							
106.00	Vitamin A, Color (KU / kg)	1	1	0.6800							
106.01	Vitamin A, UV (KU / kg)	1		0.8000							
106.02	Vitamin A, LC (KU / kg)	9	6	2.435	3.127	2.311	3.256	1.662	140.86%	0.6342	
107.00	Vitamin B12, Microbiological (µg / kg (ppb))	1		0.0040							
108.02	Vitamin D3, LC (KU / kg)	4	3	1.618	1.640	1.618	1.640	0.9469	101.35%	0.0943	
109.02	Vitamin E, LC (IU / kg)	13	12	28.32	13.14	24.77	6.297	2.272	25.42%	2.011	
109.99	Vitamin E, Miscellaneous (IU / kg)	1		5.000							
112.01	Pyridoxine, LC (µg / g)	2	2	3.548	2.047						
114.01	Biotin, Microbiological (mg / kg (ppm))	1	1	296.8							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	4.000							
120.00	Alanine, Post-col Ninhydrin Der (%)	21	20	1.482	0.0798	1.493	0.0595	0.0166	3.99%	0.0210	3.77%
120.02	Alanine, Post-col OPA Der (%)	1	1	1.557							
120.05	Alanine, Pre-col AQC Der (%)	8	7	1.504	0.0919	1.504	0.1042	0.0493	6.93%	0.0201	3.76%
120.99	Alanine, Miscellaneous (%)	1	1	1.414							
121.00	Arginine, Post-col Ninhydrin Der (%)	21	20	2.568	0.1266	2.582	0.0871	0.0244	3.37%	0.0382	3.47%
121.02	Arginine, Post-col OPA Der (%)	1	1	2.519							
121.05	Arginine, Pre-col AQC Der (%)	7	6	2.743	0.1583	2.733	0.1578	0.0805	5.77%	0.0108	3.44%
121.99	Arginine, Miscellaneous (%)	1	1	1.492							
122.00	Aspartic, Post-col Ninhydrin Der (%)	21	20	3.123	0.1684	3.145	0.0638	0.0178	2.03%	0.0400	3.37%
122.02	Aspartic, Post-col OPA Der (%)	1	1	3.155							
122.05	Aspartic, Pre-col AQC Der (%)	8	8	3.112	0.3132	3.137	0.2968	0.1312	9.46%	0.0725	3.37%

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122.99	Aspartic, Miscellaneous (%)	1	1	2.154							
124.00	Cysteine/Cystine, PAO Post-col Ninhydry (%)	21	21	0.5041	0.0392	0.5003	0.0335	0.0091	6.69%	0.0155	4.44%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.5075							
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	7	6	0.4407	0.1460	0.4407	0.1656	0.0845	37.57%	0.0117	4.52%
124.99	Cysteine/Cystine, Miscellaneous (%)	1	1	0.5247							
125.00	Glutamic, Post-col Ninhydrin Der (%)	21	20	5.913	0.3472	5.936	0.2461	0.0688	4.15%	0.0752	3.06%
125.02	Glutamic, Post-col OPA Der (%)	1	1	5.707							
125.05	Glutamic, Pre-col AQC Der (%)	8	7	5.906	0.2841	5.915	0.3010	0.1422	5.09%	0.1144	3.06%
125.99	Glutamic, Miscellaneous (%)	1	1	4.674							
126.00	Glycine, Post-col Ninhydrin Der (%)	21	20	1.607	0.0738	1.616	0.0422	0.0118	2.61%	0.0217	3.72%
126.02	Glycine, Post-col OPA Der (%)	1	1	1.623							
126.05	Glycine, Pre-col AQC Der (%)	8	8	1.685	0.2213	1.669	0.2135	0.0944	12.80%	0.0329	3.70%
126.99	Glycine, Miscellaneous (%)	1	1	0.5201							
127.00	Histidine, Post-col Ninhydrin Der (%)	21	21	0.8145	0.0673	0.8193	0.0390	0.0106	4.76%	0.0179	4.12%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.8080							
127.05	Histidine, Pre-col AQC Der (%)	8	8	0.7711	0.1197	0.7755	0.0719	0.0318	9.27%	0.0363	4.16%
127.99	Histidine, Miscellaneous (%)	1	1	0.5201							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	21	21	1.153	0.1078	1.169	0.0792	0.0216	6.78%	0.0320	3.91%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	1.190							
128.05	Isoleucine, Pre-col AQC Der (%)	8	7	1.224	0.0914	1.218	0.0889	0.0420	7.30%	0.0224	3.88%
128.99	Isoleucine, Miscellaneous (%)	1	1	0.9807							
129.00	Leucine, Post-col Ninhydrin Der (%)	21	20	2.305	0.1163	2.327	0.0549	0.0153	2.36%	0.0313	3.52%
129.02	Leucine, Post-col OPA Der (%)	1	1	2.325							
129.05	Leucine, Pre-col AQC Der (%)	8	7	2.359	0.1362	2.336	0.0969	0.0458	4.15%	0.0331	3.52%
129.99	Leucine, Miscellaneous (%)	1	1	1.773							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	22	22	1.419	0.1065	1.430	0.0761	0.0203	5.32%	0.0246	3.79%
130.02	L-Lysine, Post-col OPA Der (%)	1	1	1.540							
130.05	L-Lysine, Pre-col AQC Der (%)	9	8	1.455	0.0768	1.446	0.0647	0.0286	4.47%	0.0239	3.78%
130.99	L-Lysine, Miscellaneous (%)	1	1	1.737							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	22	21	0.4566	0.0400	0.4551	0.0247	0.0067	5.43%	0.0148	4.50%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.4355							
131.05	Methionine, PAO Pre-col AQC Der (%)	9	9	0.3875	0.1123	0.3911	0.1192	0.0497	30.48%	0.0217	4.61%
131.99	Methionine, Miscellaneous (%)	1	1	0.5614							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	21	20	1.539	0.0980	1.545	0.0687	0.0192	4.45%	0.0293	3.75%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	1.516							
132.05	Phenylalanine, Pre-col AQC Der (%)	8	7	1.611	0.1653	1.611	0.1874	0.0886	11.64%	0.0199	3.72%
132.99	Phenylalanine, Miscellaneous (%)	1	1	1.180							
133.00	Proline, Post-col Ninhydrin Der (%)	21	20	1.733	0.1941	1.738	0.1120	0.0313	6.44%	0.0390	3.68%
133.05	Proline, Pre-col AQC Der (%)	8	8	1.984	0.5616	1.871	0.3319	0.1467	17.74%	0.0443	3.64%
133.99	Proline, Miscellaneous (%)	1	1	1.574							

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134.00	Serine, Post-col Ninhydrin Der (%)	21	21	1.544	0.1049	1.546	0.0941	0.0257	6.08%	0.0346	3.75%
134.02	Serine, Post-col OPA Der (%)	1	1	1.370							
134.05	Serine, Pre-col AQC Der (%)	8	7	1.552	0.1005	1.537	0.0775	0.0366	5.04%	0.0459	3.75%
134.99	Serine, Miscellaneous (%)	1	1	1.258							
135.00	Threonine, Post-col Ninhydrin Der (%)	21	20	1.107	0.0668	1.111	0.0537	0.0150	4.83%	0.0144	3.94%
135.02	Threonine, Post-col OPA Der (%)	1	1	1.107							
135.05	Threonine, Pre-col AQC Der (%)	8	7	1.104	0.0736	1.092	0.0536	0.0253	4.91%	0.0240	3.95%
135.99	Threonine, Miscellaneous (%)	1	1	0.9578							
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	7	7	0.3772	0.0517	0.3772	0.0586	0.0277	15.54%	0.0087	4.63%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	2	2	0.3998	0.0067						
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.3730							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	5	4	0.3986	0.0094	0.3986	0.0094	0.0047	2.35%	0.0044	4.59%
136.05	Tryptophan, Pre-col AQC Der (%)	2	2	0.4265	0.2029						
136.99	Tryptophan, Miscellaneous (%)	3	3	0.4630	0.1576	0.4630	0.1576	0.0910	34.05%	0.0115	4.49%
137.00	Tyrosine, Post-col Ninhydrin Der (%)	16	15	0.9990	0.1100	0.9977	0.1219	0.0393	12.22%	0.0199	4.00%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.9920							
137.05	Tyrosine, Pre-col AQC Der (%)	8	7	1.078	0.2132	1.078	0.2418	0.1142	22.43%	0.0346	3.95%
137.99	Tyrosine, Miscellaneous (%)	1	1	0.6439							
138.00	Valine, Post-col Ninhydrin Der (%)	21	20	1.409	0.1284	1.423	0.1124	0.0314	7.90%	0.0305	3.79%
138.02	Valine, Post-col OPA Der (%)	1	1	1.511							
138.05	Valine, Pre-col AQC Der (%)	8	7	1.493	0.1119	1.481	0.0989	0.0467	6.68%	0.0196	3.77%
138.99	Valine, Miscellaneous (%)	1	1	1.120							
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.0920	0.0537						
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
139.05	Taurine, Pre-col AQC Der (%)	1		0.0000							
139.99	Taurine, Miscellaneous (%)	1	1	0.0900							
162.99	Glucose, Miscellaneous (%)	1		0.1500							
163.99	Lactose, Miscellaneous (%)	1		0.1500							
164.99	Maltose, Miscellaneous (%)	1		0.1500							
165.99	Sucrose, Miscellaneous (%)	1	1	3.600							
166.99	Raffinose, Miscellaneous (%)	1	1	1.035							
167.99	Stachyose, Miscellaneous (%)	1	1	1.385							
373.03	Oxytetracycline, LC (mg/kg (ppm))	1		10.00							
373.06	Oxytetracycline, LC-MS/MS (mg/kg (ppm))	2	2	1.378	0.8659						
393.00	Ractopamine Hydrochloride, LC (UV or FL) (mg/kg (ppm))	1		1.000							
393.02	Ractopamine Hydrochloride, LC-MS/MS (mg/kg (ppm))	2	1	0.0185							
393.99	Ractopamine Hydrochloride, Miscellaneous (mg/kg (ppm))	1	1	5.585							
400.01	Water Activity, Aqualab chilled mirror (Units)	7	7	0.4990	0.0452	0.5051	0.0184	0.0087	3.64%	0.0030	
400.99	Water Activity, Miscellaneous (Units)	3	3	0.5298	0.0500	0.5298	0.0500	0.0289	9.44%	0.0023	
412.01	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	10.50							



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516.00	Arsenic, Total, AA, Hydride (mg / kg (ppm))	2	2	0.1212	0.0116						
516.43	Arsenic, Total, ICP, Microwave (mg / kg (ppm))	1	1	1.166							
516.52	Arsenic, Total, ICP-MS, Open vessel (mg / kg (ppm))	2	2	0.1110	0.0128						
516.53	Arsenic, Total, ICP-MS, Microwave (mg / kg (ppm))	4	4	0.1407	0.0126	0.1407	0.0126	0.0063	8.95%	0.0126	21.49%
518.41	Cadmium, ICP, Dry ash (mg / kg (ppm))	2	2	0.1749	0.0426						
518.42	Cadmium, ICP, Open vessel (mg / kg (ppm))	1	1	0.4055							
518.43	Cadmium, ICP, Microwave (mg / kg (ppm))	2	2	0.1497	0.0216						
518.52	Cadmium, ICP-MS, Open vessel (mg / kg (ppm))	2	2	0.1525	0.0035						
518.53	Cadmium, ICP-MS, Microwave (mg / kg (ppm))	5	4	0.1618	0.0140	0.1618	0.0140	0.0070	8.63%	0.0027	21.04%
520.41	Chromium, ICP, Dry ash (mg / kg (ppm))	2	2	3.036	0.2321						
520.42	Chromium, ICP, Open vessel (mg / kg (ppm))	2	2	4.016	0.3734						
520.43	Chromium, ICP, Microwave (mg / kg (ppm))	3	3	3.387	1.107	3.387	1.107	0.7825	32.67%	0.5743	13.31%
520.52	Chromium, ICP-MS, Open vessel (mg / kg (ppm))	1	1	1.935							
520.53	Chromium, ICP-MS, Microwave (mg / kg (ppm))	4	4	3.025	0.5884	3.025	0.5884	0.2942	19.45%	0.2327	13.54%
526.41	Lead, ICP, Dry ash (mg / kg (ppm))	2	2	0.3187	0.2352						
526.43	Lead, ICP, Microwave (mg / kg (ppm))	1	1	0.2062							
526.52	Lead, ICP-MS, Open vessel (mg / kg (ppm))	2	1	0.0758							
526.53	Lead, ICP-MS, Microwave (mg / kg (ppm))	4	4	0.0882	0.0096	0.0882	0.0096	0.0048	10.88%	0.0080	22.00%
529.99	Mercury, Miscellaneous (µg / kg (ppb))	3	1								
539.41	Nickel, ICP, Dry ash (mg / kg (ppm))	2	2	3.399	0.0009						
539.43	Nickel, ICP, Microwave (mg / kg (ppm))	1	1	3.312							
539.52	Nickel, ICP-MS, Open vessel (mg / kg (ppm))	1	1	3.175							
539.53	Nickel, ICP-MS, Microwave (mg / kg (ppm))	2	2	3.628	0.4125						
702.00	Butyric Acid (4:0), Miscellaneous GC (%)	1		0.0000							
704.00	Caproic Acid (6:0), Miscellaneous GC (%)	1		0.0000							
706.01	Caprylic acid (8:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		0.0000							
708.01	Capric acid (10:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		0.0000							
710.01	Lauric Acid (12:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0195							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	3									
714.01	Myristic Acid (14:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0335							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	2	2	0.0298	0.0074						
716.01	Palmitic Acid (16:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.8675							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	2	2	0.9693	0.1425						
718.01	Palmitoleic Acid (9c-16:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0595							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	3	3	0.0583	0.0150	0.0583	0.0150	0.0086	25.68%	0.0047	
722.01	Stearic Acid (18:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.1575							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	2	2	0.1930	0.0240						
724.01	Oleic Acid (9c-18:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	1.205							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	2	2	1.606	0.2249						
726.01	Linoleic Acid (9c,12c-18:2), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	1.675							

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
726.02	Linoleic Acid (9c,12c-18:2), Direct Methylation by Acid-Alkali Hydrolysis & GC	1	1	2.025							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	3	3	2.153	0.2332	2.153	0.2332	0.1346	10.83%	0.0097	
728.01	alpha-Linolenic Acid (9c,12c,15c-18:3), Direct Methylation by Alkali Hydrolysis	1	1	0.1190							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	3	3	0.1340	0.0154	0.1340	0.0154	0.0089	11.49%	0.0013	
730.01	Arachidic Acid (20:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0350							
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	2	1	0.0140							
732.01	Gondoic Acid (11c-20:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0470							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	2	2	0.0445	0.0078						
736.01	Arachidonic Acid (5c,8c,11c,14c-20:4), Direct Methylation by Alkali Hydrolysis	1		0.0000							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	1	1	0.0100							
738.01	Mead Acid (11c,14c,17c-20:3), Direct Methylation by Alkali Hydrolysis & GC (%)	1	1	0.0325							
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))	2	2	0.0053	0.0004						
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	2	2	0.0233	0.0025						
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 (%)	2	1	0.0055							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0115							
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 (%)	2	2	0.0100	0.0000						
752.01	Nervonic Acid (24:1) isomers, Direct Methylation by Alkali Hydrolysis & GC (%)	1		0.0000							
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-f	1	1	0.1515							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w))	2	2	0.1700	0.0000						
756.01	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Direct Methylation by Alkali	1	1	2.050							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	2	2	2.320	0.1202						
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.405							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.880							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	2.420							
770.99	Total Fat (equivalent to NLEA), Miscellaneous (% (w/w))	1	1	6.000							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	2	2	5.209	0.7513						

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

# Methods Reported: 88

Catfish Feed

Method Precision Report

# Labs Reporting: 191

Test Material Code # 201928

Issue Date : 09/30/2019

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	42	7.450	0.3077	0.1926	0.0687	0.2045	2.58%	0.92%	2.74%	2.976
001.99	Loss on Drying, Miscellaneous (%)	19	17	7.316	0.6902	0.5221	0.1918	0.5562	7.06%	2.59%	7.52%	2.900
002.01	Protein, Crude, Auto Kjeh-Foss (%)	14	14	32.75	0.3104	0.2898	0.1572	0.3297	0.88%	0.48%	1.01%	2.097
002.05	Protein, Crude, Copper, Boric Acid (%)	34	33	32.71	0.6063	0.3331	0.1231	0.3552	1.02%	0.38%	1.09%	2.884
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	128	117	32.97	0.3713	0.2410	0.1610	0.2899	0.73%	0.49%	0.88%	1.800
003.06	Fat, Crude, Pet Ether (%)	18	16	4.167	0.0959	0.0825	0.0621	0.1033	1.98%	1.49%	2.48%	1.662
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	13	4.378	0.6092	0.2025	0.1543	0.2546	4.79%	3.65%	6.02%	1.650
003.10	Fat, Crude, Randall, Pet Ether (%)	36	33	3.997	0.2514	0.2023	0.0870	0.2202	5.10%	2.19%	5.55%	2.532
003.14	Fat, Crude, Ankom (%)	44	39	4.013	0.2315	0.2302	0.0661	0.2395	5.73%	1.64%	5.96%	3.625
004.00	Fiber, Crude, Asbestos Free (%)	12	11	7.261	1.010	0.4984	0.1769	0.5288	7.11%	2.53%	7.55%	2.989
004.06	Fiber, Crude, Fibertec (%)	19	18	7.154	0.4434	0.4249	0.1822	0.4623	5.96%	2.56%	6.48%	2.537
004.07	Fiber, Crude, ANKOM (%)	58	54	6.866	0.7233	0.6775	0.1655	0.6974	9.92%	2.42%	10.21%	4.215
005.00	Ash, 2h @ 600°C (%)	95	87	6.233	0.1445	0.0892	0.0416	0.0985	1.43%	0.67%	1.58%	2.365
005.05	Ash, 3h @ 550°C (%)	36	33	6.301	0.0729	0.0710	0.0294	0.0769	1.13%	0.47%	1.22%	2.617
005.99	Ash, Miscellaneous (%)	9	8	6.267	0.0559	0.0474	0.0418	0.0633	0.76%	0.67%	1.01%	1.512
008.02	Fiber, Acid Detergent, Crucible (%)	8	8	10.34	0.6995	0.6845	0.2038	0.7142	6.62%	1.97%	6.91%	3.505
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	38	35	10.23	1.142	0.9136	0.3568	0.9808	9.07%	3.54%	9.74%	2.749
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	39	34	22.80	2.671	1.872	0.4227	1.919	8.35%	1.88%	8.56%	4.540
010.99	Moisture, Miscellaneous (%)	16	14	7.735	0.6142	0.4475	0.1416	0.4693	5.86%	1.85%	6.14%	3.315
011.01	Loss on Drying, 135°C 2hr (%)	67	62	8.296	0.3548	0.3406	0.0670	0.3471	4.10%	0.81%	4.18%	5.183
012.00	Starch, Polarimetric (Ewers) (%)	16	15	12.91	0.8760	0.6439	0.1352	0.6580	5.05%	1.06%	5.16%	4.867
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	9	10.55	2.248	2.216	0.3036	2.237	21.53%	2.95%	21.73%	7.368
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	17	16	6.195	1.316	0.6011	0.1581	0.6215	9.28%	2.44%	9.59%	3.931
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	22	21	6.884	0.5122	0.4875	0.2219	0.5357	7.08%	3.22%	7.78%	2.414
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	10	10	7.259	0.8085	0.8019	0.1449	0.8149	11.05%	2.00%	11.23%	5.622
019.08	Calcium, EDTA (%)	10	9	0.7025	0.6872	0.1931	0.0115	0.1935	39.17%	2.34%	39.24%	16.80
019.31	Calcium, AAS, Dry ash (%)	23	21	0.4134	0.0296	0.0284	0.0108	0.0304	6.90%	2.62%	7.38%	2.815
019.41	Calcium, ICP, Dry ash (%)	25	24	0.4190	0.0360	0.0272	0.0105	0.0291	6.56%	2.52%	7.03%	2.788
019.42	Calcium, ICP, Open vessel (%)	19	17	0.4282	0.0566	0.0307	0.0109	0.0325	7.39%	2.62%	7.84%	2.996
019.43	Calcium, ICP, Microwave (%)	21	19	0.4240	0.0297	0.0267	0.0099	0.0285	6.35%	2.34%	6.77%	2.891
022.31	Copper, AAS, Dry ash (mg / kg (ppm))	13	12	12.66	2.431	2.465	0.3541	2.490	19.24%	2.76%	19.44%	7.032
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	22	18	14.23	3.451	1.643	0.5401	1.729	12.05%	3.96%	12.68%	3.202
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	20	17	13.08	0.9444	0.8092	0.3089	0.8662	6.24%	2.38%	6.68%	2.804

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))	22	19	12.91	1.325	0.9250	0.4338	1.022	7.07%	3.32%	7.81%	2.355
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	18	16	346.3	292.5	84.28	6.241	84.51	30.30%	2.24%	30.38%	13.54
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	22	22	254.7	19.37	18.36	8.743	20.33	7.21%	3.43%	7.98%	2.326
025.42	Iron, ICP, Open vessel (mg / kg (ppm))	17	17	257.5	34.69	34.02	9.585	35.34	13.21%	3.72%	13.73%	3.687
025.43	Iron, ICP, Microwave (mg / kg (ppm))	19	18	259.4	22.66	22.40	4.878	22.92	8.64%	1.88%	8.84%	4.698
027.31	Magnesium, AAS, Dry ash (%)	10	9	0.3481	0.0802	0.0248	0.0039	0.0251	6.65%	1.04%	6.73%	6.493
027.41	Magnesium, ICP, Dry ash (%)	20	20	0.3830	0.0186	0.0182	0.0056	0.0190	4.74%	1.46%	4.96%	3.408
027.42	Magnesium, ICP, Open vessel (%)	17	16	0.3845	0.0207	0.0199	0.0102	0.0223	5.17%	2.65%	5.81%	2.192
027.43	Magnesium, ICP, Microwave (%)	19	17	0.3752	0.0191	0.0192	0.0027	0.0194	5.10%	0.73%	5.15%	7.069
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	14	13	78.88	19.04	6.768	0.8395	6.819	9.13%	1.13%	9.20%	8.124
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	20	19	75.49	5.275	5.150	1.613	5.397	6.82%	2.14%	7.15%	3.346
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	19	19	76.75	5.788	5.555	2.299	6.012	7.24%	2.99%	7.83%	2.615
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	21	20	77.62	4.882	4.796	1.288	4.966	6.18%	1.66%	6.40%	3.855
031.01	Phosphorus, Photometric (%)	40	36	1.068	0.0868	0.0420	0.0200	0.0465	3.88%	1.85%	4.29%	2.326
031.41	Phosphorus, ICP, Dry ash (%)	23	21	1.076	0.0553	0.0555	0.0155	0.0577	5.16%	1.44%	5.36%	3.722
031.42	Phosphorus, ICP, Open vessel (%)	19	16	1.094	0.0860	0.0668	0.0196	0.0696	6.00%	1.77%	6.26%	3.544
031.43	Phosphorus, ICP, Microwave (%)	19	17	1.105	0.0657	0.0367	0.0159	0.0400	3.36%	1.46%	3.66%	2.510
032.31	Potassium, AAS, Dry ash (%)	13	12	1.517	0.1432	0.0918	0.0359	0.0985	6.17%	2.42%	6.63%	2.743
032.41	Potassium, ICP, Dry ash (%)	21	18	1.455	0.0950	0.0713	0.0238	0.0752	4.84%	1.61%	5.10%	3.162
032.42	Potassium, ICP, Open vessel (%)	16	14	1.470	0.0597	0.0405	0.0279	0.0492	2.78%	1.91%	3.37%	1.764
032.43	Potassium, ICP, Microwave (%)	19	18	1.444	0.1097	0.1059	0.0323	0.1108	7.37%	2.25%	7.71%	3.427
033.00	Salt as chloride, Sol Cl (%)	14	14	0.1291	0.0266	0.0261	0.0066	0.0270	20.25%	5.12%	20.89%	4.076
033.01	Salt as chloride, Poten Cl (%)	20	15	0.1339	0.0239	0.0171	0.0039	0.0176	13.46%	3.07%	13.81%	4.498
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	10	8	0.4026	0.0842	0.0709	0.0451	0.0840	18.25%	11.61%	21.63%	1.863
035.31	Sodium, AAS, Dry ash (%)	19	17	0.1227	0.0363	0.0237	0.0035	0.0239	20.41%	3.03%	20.63%	6.803
035.41	Sodium, ICP, Dry ash (%)	20	19	0.1063	0.0119	0.0045	0.0062	0.0076	4.30%	5.95%	7.34%	1.233
035.42	Sodium, ICP, Open vessel (%)	13	12	0.1035	0.0102	0.0089	0.0038	0.0097	8.76%	3.76%	9.53%	2.533
035.43	Sodium, ICP, Microwave (%)	20	17	0.1093	0.0244	0.0102	0.0030	0.0106	9.83%	2.90%	10.25%	3.530
036.42	Sulfur, ICP, Open vessel (%)	20	18	0.3492	0.0547	0.0327	0.0084	0.0337	9.06%	2.32%	9.35%	4.032
036.43	Sulfur, ICP, Microwave (%)	12	11	0.3696	0.0226	0.0224	0.0047	0.0229	6.05%	1.28%	6.19%	4.833
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	17	16	98.49	4.371	4.179	1.811	4.554	4.24%	1.84%	4.62%	2.514
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	22	19	101.3	8.111	5.839	3.743	6.936	5.83%	3.74%	6.93%	1.853
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	19	18	104.7	25.27	11.39	3.187	11.83	11.45%	3.20%	11.89%	3.710
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	22	21	103.0	10.04	9.720	3.562	10.35	9.44%	3.46%	10.05%	2.906
109.02	Vitamin E, LC (IU / kg)	13	12	28.32	13.14	13.07	1.958	13.22	46.16%	6.92%	46.67%	6.749
120.00	Alanine, Post-col Ninhydrin Der (%)	21	18	1.482	0.0798	0.0447	0.0180	0.0482	2.98%	1.20%	3.21%	2.678
121.00	Arginine, Post-col Ninhydrin Der (%)	21	18	2.568	0.1266	0.0988	0.0279	0.1027	3.83%	1.08%	3.98%	3.686
122.00	Aspartic, Post-col Ninhydrin Der (%)	21	18	3.123	0.1684	0.0895	0.0271	0.0935	2.84%	0.86%	2.96%	3.457
122.05	Aspartic, Pre-col AQC Der (%)	8	8	3.112	0.3132	0.3089	0.0733	0.3175	9.93%	2.36%	10.20%	4.332
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	21	19	0.5041	0.0392	0.0268	0.0118	0.0292	5.36%	2.35%	5.85%	2.485
125.00	Glutamic, Post-col Ninhydrin Der (%)	21	18	5.913	0.3472	0.2397	0.0598	0.2471	4.02%	1.00%	4.14%	4.132
126.00	Glycine, Post-col Ninhydrin Der (%)	21	18	1.607	0.0738	0.0517	0.0180	0.0548	3.19%	1.11%	3.38%	3.050
127.00	Histidine, Post-col Ninhydrin Der (%)	21	18	0.8145	0.0673	0.0384	0.0147	0.0411	4.69%	1.80%	5.02%	2.794

Test Material Code # 201928

Issue Date : 09/30/2019

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
127.05	Histidine, Pre-col AQC Der (%)	8	8	0.7711	0.1197	0.1173	0.0337	0.1221	15.22%	4.37%	15.83%	3.621
128.00	Isoleucine, Post-col Ninhydrin Der (%)	21	19	1.153	0.1078	0.0861	0.0241	0.0894	7.35%	2.05%	7.64%	3.717
129.00	Leucine, Post-col Ninhydrin Der (%)	21	17	2.305	0.1163	0.0454	0.0231	0.0509	1.94%	0.99%	2.17%	2.205
130.00	L-Lysine, Post-col Ninhydrin Der (%)	22	21	1.419	0.1065	0.1082	0.0193	0.1099	7.62%	1.36%	7.74%	5.708
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	22	18	0.4566	0.0400	0.0220	0.0114	0.0248	4.81%	2.50%	5.42%	2.169
131.05	Methionine, PAO Pre-col AQC Der (%)	9	9	0.3875	0.1123	0.1112	0.0219	0.1133	28.70%	5.64%	29.25%	5.183
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	21	18	1.539	0.0980	0.0704	0.0220	0.0738	4.53%	1.42%	4.74%	3.346
133.00	Proline, Post-col Ninhydrin Der (%)	21	19	1.733	0.1941	0.1496	0.0425	0.1555	8.49%	2.42%	8.83%	3.655
134.00	Serine, Post-col Ninhydrin Der (%)	21	19	1.544	0.1049	0.1078	0.0224	0.1101	7.00%	1.45%	7.14%	4.923
135.00	Threonine, Post-col Ninhydrin Der (%)	21	18	1.107	0.0668	0.0465	0.0101	0.0476	4.14%	0.90%	4.24%	4.700
137.00	Tyrosine, Post-col Ninhydrin Der (%)	16	14	0.9990	0.1100	0.1102	0.0123	0.1109	10.95%	1.22%	11.02%	9.030
138.00	Valine, Post-col Ninhydrin Der (%)	21	20	1.409	0.1284	0.1265	0.0305	0.1302	8.98%	2.17%	9.24%	4.266

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