



AAFCO
Association of American Feed Control Officials



Pet Food Ingredient Scheme

Corn

Test Material Code # 202342

Method Summary Report

(Precision Report Follows)

Labs Reporting: 84

Methods Reported: 248

Issue Date : 06/30/2023

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
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	48	47	12.61	0.2197	12.62	0.2154	0.0393	1.71%	0.0995	2.73%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	5	5	12.22	0.2133	12.22	0.2133	0.0954	1.75%	0.1174	2.74%
001.99	Loss on Drying, Miscellaneous (%)	5	4	12.40	0.1159	12.40	0.1159	0.0579	0.93%	0.1000	2.74%
001.03	Loss on Drying, Low temp. methods (%)	3	3	12.68	0.5541	12.68	0.5541	0.3199	4.37%	0.1200	2.73%
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	74	71	7.493	0.2309	7.509	0.1582	0.0235	2.11%	0.0907	2.95%
002.01	Protein, Crude, Auto Kjell-Foss (%)	5	5	7.603	0.3858	7.603	0.3858	0.1725	5.07%	0.1935	2.95%
002.00	Protein, Crude, Crude (%)	2	2	7.403	0.2722						
002.04	Protein, Crude, Copper Catalyst (%)	2	2	7.500	0.1768						
002.05	Protein, Crude, Copper, Boric Acid (%)	2	2	7.500	0.0566						
002.08	Protein, Crude, Cu/Ti (%)	1	1	7.500							
002.10	Protein, Crude, Block dig/distillation (%)	1	1	7.380							
002.11	Protein, Crude, NIR (%)	1	1	7.620							
002.99	Protein, Crude, Miscellaneous (%)	1	1	7.895							
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	16	16	3.218	0.1015	3.219	0.1133	0.0354	3.52%	0.1308	3.35%
003.14	Fat, Crude, Ankom (%)	15	13	3.314	0.5557	3.203	0.2900	0.1006	9.06%	0.0619	3.36%
003.06	Fat, Crude, Pet Ether (%)	6	6	3.241	0.4644	3.157	0.3161	0.1613	10.01%	0.1180	3.36%
003.10	Fat, Crude, Randall, Pet Ether (%)	6	6	3.196	0.0746	3.196	0.0845	0.0431	2.64%	0.1056	3.36%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	4	4	3.124	0.2246	3.124	0.2246	0.1123	7.19%	0.1293	3.37%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	2	2	3.276	0.0085						
003.99	Fat, Crude, Miscellaneous (%)	2	2	3.238	0.3359						
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	3.380							
003.12	Fat, Crude, Hexane Ext (%)	1	1	3.210							
004.07	Fiber, Crude, ANKOM (%)	19	19	1.445	0.4963	1.515	0.4024	0.1154	26.56%	0.1573	3.76%
004.00	Fiber, Crude, Asbestos Free (%)	9	9	1.649	0.2972	1.642	0.3199	0.1333	19.48%	0.1162	3.71%
004.06	Fiber, Crude, Fibertec (%)	3	3	1.267	0.9433	1.267	0.9433	0.6670	74.47%	0.0933	3.86%
004.03	Fiber, Crude, Fritted Glass (%)	2	2	1.425	0.3182						
005.00	Ash, 2h @ 600°C (%)	50	49	1.118	0.0748	1.122	0.0645	0.0115	5.75%	0.0465	3.93%
005.05	Ash, 3h @ 550°C (%)	17	16	1.152	0.0201	1.150	0.0196	0.0061	1.71%	0.0239	3.92%
005.03	Ash, Microwave furnace (%)	7	7	1.152	0.0695	1.138	0.0413	0.0195	3.63%	0.0750	3.92%

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005.99	Ash, Miscellaneous (%)	1	1	1.105							
006.00	Total Sugars, As sucrose (%)	1	1	1.780							
006.99	Total Sugars, Miscellaneous (%)	1	1	2.182							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	9	9	2.289	0.2588	2.289	0.2934	0.1223	12.82%	0.1198	3.53%
008.02	Fiber, Acid Detergent, Crucible (%)	4	3	2.370	0.6821	2.370	0.6821	0.3938	28.78%	0.0544	3.51%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	1	1	2.290							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	6	6	7.107	0.4226	7.107	0.4793	0.2446	6.74%	0.2280	2.98%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	3	3	9.131	3.069	9.131	3.069	1.772	33.61%	0.3062	2.87%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	6.950							
010.99	Moisture, Miscellaneous (%)	1	1	12.77							
011.01	Loss on Drying, HT, 135°C 2hr (%)	20	19	12.49	2.331	13.00	0.5589	0.1603	4.30%	0.1065	2.72%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	3	3	13.23	0.2127	13.23	0.2127	0.1228	1.61%	0.0467	2.71%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	3	3	65.34	3.067	65.34	3.067	1.771	4.69%	0.7769	1.24%
012.00	Starch, Polarimetric (Ewers) (%)	2	2	67.65	0.4950						
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	2	2	62.15	0.7327						
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	2	2	62.10	2.546						
012.99	Starch, Miscellaneous (%)	1	1	67.00							
013.00	Fat, Pretreat, Acid hydrolysis (%)	12	11	3.730	0.2065	3.763	0.1375	0.0518	3.65%	0.1284	3.28%
013.02	Fat, Pretreat, Mojonnier, Bak Ext, Acid hydrolysis (%)	11	11	3.747	0.4169	3.762	0.4390	0.1655	11.67%	0.1501	3.28%
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	2	2	3.700	0.2758						
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	1	1	4.248							
015.41	Aluminum, ICP, Dry ash (ppm)	1	1	2.240							
015.43	Aluminum, ICP, Microwave (ppm)	1	1	0.7368							
015.53	Aluminum, ICP-MS, Microwave (ppm)	1	1	0.6667							
017.43	Boron, ICP, Microwave (ppm)	3	3	1.698	0.2613	1.698	0.2613			0.0316	14.77%
017.41	Boron, ICP, Dry ash (ppm)	1	1	0.7207							
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	1.346							
019.43	Calcium, ICP, Microwave (%)	18	17	0.0059	0.0028	0.0059	0.0031	0.0009	52.59%	0.0003	8.65%
019.41	Calcium, ICP, Dry ash (%)	11	9	0.0095	0.0046	0.0100	0.0000	0.0000	0.00%	0.0004	8.00%
019.44	Calcium, ICP, Dry ash (%)	24	3	0.0172	0.0063	0.0172	0.0063	0.0045	36.40%		7.37%
019.42	Calcium, ICP, Open vessel (%)	2	2	0.0032	0.0010						
019.53	Calcium, ICP-MS, Microwave (%)	3	2	0.0042	0.0003	0.0042	0.0003			0.0011	9.12%
019.00	Calcium, Ox-Mn04 Vol. (%)	1	1	0.0300							
019.31	Calcium, AAS, Dry ash (%)	1	1	0.0100							
019.99	Calcium, Miscellaneous (%)	1		0.0100							
021.43	Cobalt, ICP, Microwave (ppm)	2	2	0.2314	0.0091						
021.41	Cobalt, ICP, Dry ash (ppm)	1	1	0.1163							
021.53	Cobalt, ICP-MS, Microwave (ppm)	2	1	0.0156							
021.31	Cobalt, AAS, Dry ash (ppm)	1		0.5000							
022.43	Copper, ICP, Microwave (ppm)	14	14	1.815	0.9374	1.580	0.4255	0.1422	26.93%	0.2176	14.93%

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022.44	Copper, ICP, Dry ash (ppm)	10	10	1.636	0.5882	1.772	0.2490	0.0984	14.05%	0.0982	14.68%
022.41	Copper, ICP, Dry ash (ppm)	6	6	1.709	0.6911	1.821	0.5037	0.2570	27.66%	0.0505	14.62%
022.42	Copper, ICP, Open vessel (ppm)	2	2	1.506	0.0481						
022.53	Copper, ICP-MS, Microwave (ppm)	2	2	0.8577	1.199						
022.33	Copper, AAS, Microwave (ppm)	1	1	1.750							
022.52	Copper, ICP-MS, Open vessel (ppm)	1	1	3.139							
022.31	Copper, AAS, Dry ash (ppm)	2		0.1514							
022.99	Copper, Miscellaneous (ppm)	1		1.000							
025.43	Iron, ICP, Microwave (ppm)	11	10	14.71	5.380	15.94	2.342	0.9259	14.69%	1.145	10.55%
025.41	Iron, ICP, Dry ash (ppm)	5	5	19.82	1.630	19.82	1.630	0.7289	8.22%	0.8113	10.21%
025.42	Iron, ICP, Open vessel (ppm)	2	2	20.30	6.272						
025.53	Iron, ICP-MS, Microwave (ppm)	2	2	14.21	2.632						
025.31	Iron, AAS, Dry ash (ppm)	2	1	19.30							
025.52	Iron, ICP-MS, Open vessel (ppm)	1	1	30.52							
025.99	Iron, Miscellaneous (ppm)	1	1	14.00							
027.44	Magnesium, ICP, Dry ash (%)	24	23	0.0669	0.0015	0.0670	0.0015	0.0004	2.19%	0.0017	6.01%
027.43	Magnesium, ICP, Microwave (%)	18	17	0.0742	0.0051	0.0743	0.0057	0.0017	7.68%	0.0041	5.92%
027.41	Magnesium, ICP, Dry ash (%)	10	10	0.0759	0.0061	0.0749	0.0044	0.0017	5.81%	0.0027	5.91%
027.42	Magnesium, ICP, Open vessel (%)	3	3	0.0656	0.0140	0.0656	0.0140	0.0081	21.30%	0.0027	6.03%
027.53	Magnesium, ICP-MS, Microwave (%)	2	2	0.0722	0.0033						
027.31	Magnesium, AAS, Dry ash (%)	1	1	0.0700							
027.99	Magnesium, Miscellaneous (%)	1	1	0.0700							
028.43	Manganese, ICP, Microwave (ppm)	18	16	5.699	0.3992	5.721	0.4026	0.1258	7.04%	0.1979	12.30%
028.44	Manganese, ICP, Dry ash (ppm)	17	16	5.765	0.3628	5.765	0.4114	0.1286	7.14%	0.2173	12.29%
028.41	Manganese, ICP, Dry ash (ppm)	11	11	5.979	0.5925	5.979	0.6719	0.2532	11.24%	0.1749	12.22%
028.42	Manganese, ICP, Open vessel (ppm)	2	2	4.534	1.503						
028.53	Manganese, ICP-MS, Microwave (ppm)	2	2	5.358	0.2719						
028.31	Manganese, AAS, Dry ash (ppm)	2	1	6.450							
028.52	Manganese, ICP-MS, Open vessel (ppm)	1	1	6.255							
028.99	Manganese, Miscellaneous (ppm)	1	1	5.000							
031.44	Phosphorus, ICP, Dry ash (%)	25	24	0.2453	0.0174	0.2441	0.0167	0.0043	6.86%	0.0123	4.95%
031.43	Phosphorus, ICP, Microwave (%)	21	20	0.2672	0.0789	0.2522	0.0198	0.0055	7.83%	0.0102	4.92%
031.41	Phosphorus, ICP, Dry ash (%)	10	10	0.2553	0.0244	0.2498	0.0111	0.0044	4.44%	0.0075	4.93%
031.42	Phosphorus, ICP, Open vessel (%)	4	4	0.2421	0.0347	0.2421	0.0347	0.0174	14.33%	0.0162	4.95%
031.01	Phosphorus, Photometric (%)	3	3	0.2767	0.0322	0.2767	0.0322				4.85%
031.53	Phosphorus, ICP-MS, Microwave (%)	2	2	0.2290	0.0085						
031.03	Phosphorus, Autoanalyzer (%)	1	1	0.2415							
031.99	Phosphorus, Miscellaneous (%)	1	1	0.2100							
032.44	Potassium, ICP, Dry ash (%)	24	24	0.2915	0.0131	0.2915	0.0133	0.0034	4.57%	0.0142	4.82%
032.43	Potassium, ICP, Microwave (%)	20	19	0.3165	0.0200	0.3165	0.0191	0.0055	6.05%	0.0122	4.76%

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032.41	Potassium, ICP, Dry ash (%)	11	11	0.3173	0.0171	0.3171	0.0158	0.0060	4.99%	0.0119	4.75%
032.42	Potassium, ICP, Open vessel (%)	4	4	0.2671	0.0408	0.2671	0.0408	0.0204	15.28%	0.0294	4.88%
032.31	Potassium, AAS, Dry ash (%)	3	3	0.3365	0.0205	0.3365	0.0205	0.0145	6.10%		4.71%
032.53	Potassium, ICP-MS, Microwave (%)	2	2	0.3037	0.0160						
032.99	Potassium, Miscellaneous (%)	2	2	0.2897	0.0208						
033.01	Salt as chloride, Poten Cl (%)	6	4	0.0730	0.0154	0.0730	0.0154	0.0096			5.93%
033.99	Salt, Miscellaneous (%)	1	1	0.0700							
033.00	Salt as chloride, Sol Cl (%)	1		0.1000							
034.04	Selenium, Total (Se), AA, Hydride (ppm)	1	1	0.0600							
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	2	1	0.0715							
035.41	Sodium, ICP, Dry ash (%)	33	25	0.0095	0.0054	0.0089	0.0044	0.0011	50.24%	0.0043	8.15%
035.43	Sodium, ICP, Microwave (%)	15	8	0.0018	0.0020	0.0013	0.0009	0.0004	70.54%	0.0007	10.90%
035.42	Sodium, ICP, Open vessel (%)	1	1	0.0004							
035.53	Sodium, ICP-MS, Microwave (%)	3	1								
035.99	Sodium, Miscellaneous (%)	1		0.0100							
036.43	Sulfur, ICP, Microwave (%)	8	8	0.1043	0.0188	0.0989	0.0053	0.0023	5.33%	0.0045	5.67%
036.42	Sulfur, ICP, Open vessel (%)	3	3	0.1000	0.0072	0.1000	0.0072	0.0041	7.18%	0.0015	5.66%
036.99	Sulfur, Miscellaneous (%)	1		0.1000							
037.43	Zinc, ICP, Microwave (ppm)	16	16	17.42	6.459	18.33	4.275	1.336	23.32%	0.6424	10.33%
037.41	Zinc, ICP, Dry ash (ppm)	14	14	16.81	6.143	17.50	5.044	1.685	28.83%	2.117	10.40%
037.31	Zinc, AAS, Dry ash (ppm)	3	3	19.36	1.682	19.36	1.682	1.189	8.69%	0.4850	10.24%
037.42	Zinc, ICP, Open vessel (ppm)	3	3	21.38	3.447	21.38	3.447	1.990	16.12%	1.818	10.09%
037.44	Zinc, ICP, Dry ash (ppm)	3	3	16.02	4.326	16.02	4.326	3.059	27.01%	0.1600	10.54%
037.53	Zinc, ICP-MS, Microwave (ppm)	2	2	16.14	1.613						
037.33	Zinc, AAS, Microwave (ppm)	1	1	19.55							
037.52	Zinc, ICP-MS, Open vessel (ppm)	1	1	22.84							
037.99	Zinc, Miscellaneous (ppm)	1	1	18.50							
038.41	Molybdenum, ICP, Dry ash (ppm)	2	2	0.1258	0.0123						
038.43	Molybdenum, ICP, Microwave (ppm)	2	2	0.2352	0.1624						
038.53	Molybdenum, ICP-MS, Microwave (ppm)	2	1	0.1248							
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	0.1894							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	0.0105							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	1	1	0.1300							
120.00	Alanine, Post-col Ninhydrin Der (%)	4	3	0.5672	0.0193	0.5672	0.0193	0.0112	3.41%	0.0072	4.36%
120.05	Alanine, Pre-col AQC Der (%)	2	2	0.5470	0.0332						
120.99	Alanine, Miscellaneous (%)	2	2	0.5625	0.0530						
120.02	Alanine, Post-col OPA Der (%)	1	1	0.4950							
121.00	Arginine, Post-col Ninhydrin Der (%)	4	4	0.3611	0.0240	0.3611	0.0240	0.0120	6.63%	0.0122	4.66%
121.05	Arginine, Pre-col AQC Der (%)	2	2	0.3518	0.0244						
121.99	Arginine, Miscellaneous (%)	2	2	0.3725	0.0106						

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121.02	Arginine, Post-col OPA Der (%)	1	1	0.3300							
122.00	Aspartic, Post-col Ninhydrin Der (%)	4	4	0.5083	0.0235	0.5083	0.0235	0.0118	4.63%	0.0227	4.43%
122.05	Aspartic, Pre-col AQC Der (%)	2	2	0.5043	0.0506						
122.99	Aspartic, Miscellaneous (%)	2	2	0.4675	0.0460						
122.02	Aspartic, Post-col OPA Der (%)	1	1	0.4600							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	4	4	0.1872	0.0153	0.1872	0.0153	0.0076	8.15%	0.0149	5.15%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	2	2	0.2407	0.0082						
124.99	Cysteine/Cystine, Miscellaneous (%)	2	2	0.3500	0.2263						
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.2200							
125.00	Glutamic, Post-col Ninhydrin Der (%)	4	4	1.455	0.0589	1.455	0.0589	0.0294	4.05%	0.0650	3.78%
125.05	Glutamic, Pre-col AQC Der (%)	2	2	1.499	0.2245						
125.99	Glutamic, Miscellaneous (%)	2	2	1.415	0.1061						
125.02	Glutamic, Post-col OPA Der (%)	1	1	1.365							
126.00	Glycine, Post-col Ninhydrin Der (%)	4	3	0.3086	0.0096	0.3086	0.0096	0.0056	3.12%	0.0036	4.77%
126.05	Glycine, Pre-col AQC Der (%)	2	2	0.3285	0.0354						
126.99	Glycine, Miscellaneous (%)	2	2	0.3050	0.0354						
126.02	Glycine, Post-col OPA Der (%)	1	1	0.2800							
127.00	Histidine, Post-col Ninhydrin Der (%)	4	4	0.2330	0.0505	0.2330	0.0505	0.0252	21.66%	0.0053	4.98%
127.05	Histidine, Pre-col AQC Der (%)	2	2	0.1743	0.0704						
127.99	Histidine, Miscellaneous (%)	2	2	0.2150	0.0212						
127.02	Histidine, Post-col OPA Der (%)	1	1	0.2100							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	4	4	0.2735	0.0129	0.2735	0.0129	0.0065	4.73%	0.0092	4.86%
128.05	Isoleucine, Pre-col AQC Der (%)	2	2	0.2573	0.0081						
128.99	Isoleucine, Miscellaneous (%)	2	2	0.3100	0.0424						
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.2400							
129.00	Leucine, Post-col Ninhydrin Der (%)	4	4	0.9220	0.0180	0.9220	0.0180	0.0090	1.95%	0.0394	4.05%
129.05	Leucine, Pre-col AQC Der (%)	2	2	0.9228	0.0774						
129.99	Leucine, Miscellaneous (%)	2	2	0.8600	0.0424						
129.02	Leucine, Post-col OPA Der (%)	1	1	0.8600							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	4	4	0.2474	0.0200	0.2474	0.0200	0.0100	8.10%	0.0101	4.94%
130.05	L-Lysine, Pre-col AQC Der (%)	2	2	0.2370	0.0297						
130.99	L-Lysine, Miscellaneous (%)	2	2	0.2350	0.0212						
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.2250							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	4	3	0.1774	0.0116	0.1774	0.0116	0.0067	6.52%	0.0124	5.19%
131.05	Methionine, PAO Pre-col AQC Der (%)	2	2	0.2211	0.0192						
131.99	Methionine, Miscellaneous (%)	2	2	0.1750	0.0212						
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.1750							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	4	4	0.3691	0.0099	0.3691	0.0099	0.0050	2.68%	0.0107	4.65%
132.05	Phenylalanine, Pre-col AQC Der (%)	2	2	0.3653	0.0435						
132.99	Phenylalanine, Miscellaneous (%)	2	2	0.3350	0.0495						

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (Rob R-bar)	Thompson Horwitz %RSD
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.3000							
133.00	Proline, Post-col Ninhydrin Der (%)	4	4	0.6816	0.0299	0.6816	0.0299	0.0149	4.39%	0.0359	4.24%
133.99	Proline, Miscellaneous (%)	3	3	0.6867	0.0993	0.6867	0.0993	0.0702	14.46%	0.0800	4.23%
133.05	Proline, Pre-col AQC Der (%)	2	2	0.6808	0.0583						
134.00	Serine, Post-col Ninhydrin Der (%)	4	4	0.3755	0.0147	0.3755	0.0147	0.0074	3.92%	0.0220	4.64%
134.05	Serine, Pre-col AQC Der (%)	2	2	0.3505	0.1103						
134.99	Serine, Miscellaneous (%)	2	2	0.3775	0.0035						
134.02	Serine, Post-col OPA Der (%)	1	1	0.3600							
135.00	Threonine, Post-col Ninhydrin Der (%)	4	4	0.2765	0.0107	0.2765	0.0107	0.0053	3.86%	0.0089	4.85%
135.05	Threonine, Pre-col AQC Der (%)	2	2	0.2523	0.0605						
135.99	Threonine, Miscellaneous (%)	2	2	0.2700	0.0141						
135.02	Threonine, Post-col OPA Der (%)	1	1	0.2500							
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	2	2	0.0685	0.0092						
136.05	Tryptophan, Pre-col AQC Der (%)	2	2	0.1220	0.0714						
136.99	Tryptophan, Miscellaneous (%)	2	2	0.1025	0.0672						
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.0500							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	1	1	0.0592							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	4	3	0.2046	0.0570	0.2046	0.0570	0.0403	27.86%		5.08%
137.05	Tyrosine, Pre-col AQC Der (%)	2	2	0.2625	0.1075						
137.99	Tyrosine, Miscellaneous (%)	2	2	0.2550	0.0778						
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.1700							
138.00	Valine, Post-col Ninhydrin Der (%)	4	4	0.3821	0.0283	0.3821	0.0283	0.0141	7.40%	0.0127	4.62%
138.05	Valine, Pre-col AQC Der (%)	2	2	0.3883	0.0400						
138.99	Valine, Miscellaneous (%)	2	2	0.3350	0.1061						
138.02	Valine, Post-col OPA Der (%)	1	1	0.3450							
139.00	Taurine, Post-col Ninhydrin Der (%)	1	1	0.1600							
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0010							
400.01	Water Activity, Aqualab chilled mirror (Units)	1	1	0.5823							
413.01	Starch, Resistant, Enzymatic-Colorimetric (%)	1	1	63.15							
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	2	1	0.0226							
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		0.8900							
518.41	Cadmium, ICP, Dry ash (ppm)	1	1	0.0131							
518.43	Cadmium, ICP, Microwave (ppm)	2	1	0.0199							
518.53	Cadmium, ICP-MS, Microwave (ppm)	2	1	0.0039							
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	2	2	0.3419	0.0027						
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	1	1	0.2674							
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	2	1	0.0595							
526.41	Lead, ICP, Dry ash (ppm)	1	1	0.0401							
526.43	Lead, ICP, Microwave (ppm)	1	1	0.2472							
526.53	Lead, ICP-MS, Microwave (ppm)	2	1	0.0045							

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) - Robust	% RSD - Robust	Average Range (Rob R-bar)	Thompson Horwitz %RSD
529.99	Mercury, Miscellaneous (ppb)	2	1	1.056							
539.41	Nickel, ICP, Dry ash (ppm)	1	1	0.5381							
539.43	Nickel, ICP, Microwave (ppm)	1	1	0.5025							
539.53	Nickel, ICP-MS, Microwave (ppm)	2	1	0.4500							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	1		0.0200							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	1		0.0200							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	1	1	0.2945							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	1		0.0200							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	1	1	0.8555							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	1	1	1.641							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	1	1	0.0360							
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	1		0.0200							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w))	1	1	0.0360							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	1	1	1.641							
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	0.3695							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	0.8930							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.677							
770.99	Total Fat (equivalent to NLEA), Miscellaneous (% (w/w))	1	1	3.076							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	1	1	2.942							

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.



Pet Food Ingredient Scheme

Methods Reported: 42

Corn

Method Precision Report

Labs Reporting: 84

Test Material Code # 202342

Issue Date : 06/30/2023

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
001.00	Loss on Drying, Vac 95°C 5 hr (%)	5	5	12.22	0.2133	0.1992	0.1080	0.2266	1.63%	0.88%	1.85%	2.098
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	48	44	12.61	0.2197	0.1838	0.0932	0.2061	1.46%	0.74%	1.63%	2.211
002.01	Protein, Crude, Auto Kjeh-Foss (%)	5	5	7.603	0.3858	0.3802	0.0926	0.3913	5.00%	1.22%	5.15%	4.227
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	74	66	7.493	0.2309	0.1622	0.0812	0.1814	2.16%	1.08%	2.41%	2.235
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	16	15	3.218	0.1015	0.0463	0.1193	0.1280	1.43%	3.70%	3.96%	1.073
003.06	Fat, Crude, Pet Ether (%)	6	5	3.241	0.4644	0.1597	0.0915	0.1840	5.21%	2.99%	6.01%	2.010
003.10	Fat, Crude, Randall, Pet Ether (%)	6	6	3.196	0.0746	0.0442	0.0849	0.0957	1.38%	2.66%	2.99%	1.127
003.14	Fat, Crude, Ankom (%)	15	12	3.314	0.5557	0.2442	0.0661	0.2530	7.69%	2.08%	7.97%	3.826
004.00	Fiber, Crude, Asbestos Free (%)	9	9	1.649	0.2972	0.2899	0.0924	0.3043	17.58%	5.60%	18.45%	3.293
004.07	Fiber, Crude, ANKOM (%)	19	19	1.445	0.4963	0.4880	0.1276	0.5044	33.77%	8.83%	34.91%	3.954
005.00	Ash, 2h @ 600°C (%)	50	46	1.118	0.0748	0.0608	0.0435	0.0748	5.44%	3.89%	6.68%	1.719
005.03	Ash, Microwave furnace (%)	7	6	1.152	0.0695		0.0558			4.94%		
005.05	Ash, 3h @ 550°C (%)	17	14	1.152	0.0201	0.0105	0.0178	0.0207	0.92%	1.55%	1.80%	1.162
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	9	8	2.289	0.2588	0.2686	0.0785	0.2798	11.68%	3.41%	12.16%	3.566
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	6	5	7.107	0.4226	0.3711	0.1390	0.3962	5.30%	1.98%	5.66%	2.850
011.01	Loss on Drying, HT, 135°C 2hr (%)	20	17	12.49	2.331	0.5035	0.1284	0.5196	3.85%	0.98%	3.98%	4.046
013.00	Fat, Pretreat, Acid hydrolysis (%)	12	9	3.730	0.2065	0.0519	0.0928	0.1063	1.36%	2.44%	2.79%	1.146
013.02	Fat, Pretreat, Mojonier, Bak Ext, Acid hydrolysis (%)	11	11	3.747	0.4169	0.4083	0.1191	0.4253	10.90%	3.18%	11.35%	3.571
019.41	Calcium, ICP, Dry ash (%)	11	7	0.0095	0.0046	0.0023	0.0000	0.0023	26.52%	0.43%	26.53%	61.16
019.43	Calcium, ICP, Microwave (%)	18	17	0.0059	0.0028	0.0027	0.0002	0.0028	46.32%	3.23%	46.43%	14.37
022.41	Copper, ICP, Dry ash (ppm)	6	5	1.709	0.6911	0.2736	0.0322	0.2755	13.87%	1.63%	13.97%	8.549
022.43	Copper, ICP, Microwave (ppm)	14	12	1.815	0.9374	0.2747	0.0953	0.2907	18.64%	6.46%	19.72%	3.052
022.44	Copper, ICP, Dry ash (ppm)	10	9	1.636	0.5882	0.1733	0.0983	0.1992	9.56%	5.42%	10.99%	2.026
025.41	Iron, ICP, Dry ash (ppm)	5	5	19.82	1.630	1.574	0.5991	1.684	7.94%	3.02%	8.50%	2.811
025.43	Iron, ICP, Microwave (ppm)	11	9	14.71	5.380	1.553	1.161	1.939	9.51%	7.11%	11.87%	1.671
027.41	Magnesium, ICP, Dry ash (%)	10	9	0.0759	0.0061	0.0031	0.0014	0.0034	4.20%	1.82%	4.58%	2.517
027.43	Magnesium, ICP, Microwave (%)	18	17	0.0742	0.0051	0.0045	0.0032	0.0056	6.12%	4.36%	7.51%	1.722
027.44	Magnesium, ICP, Dry ash (%)	24	21	0.0669	0.0015	0.0010	0.0010	0.0015	1.55%	1.56%	2.20%	1.408
028.41	Manganese, ICP, Dry ash (ppm)	11	10	5.979	0.5925	0.5989	0.1814	0.6258	9.96%	3.02%	10.41%	3.449
028.43	Manganese, ICP, Microwave (ppm)	18	15	5.699	0.3992	0.3902	0.1517	0.4187	6.87%	2.67%	7.37%	2.759
028.44	Manganese, ICP, Dry ash (ppm)	17	15	5.765	0.3628	0.3520	0.1835	0.3970	6.10%	3.18%	6.88%	2.163
031.41	Phosphorus, ICP, Dry ash (%)	10	9	0.2553	0.0244	0.0080	0.0034	0.0087	3.21%	1.38%	3.50%	2.539
031.43	Phosphorus, ICP, Microwave (%)	21	18	0.2672	0.0789	0.0168	0.0078	0.0186	6.71%	3.12%	7.40%	2.368
031.44	Phosphorus, ICP, Dry ash (%)	25	23	0.2453	0.0174	0.0141	0.0067	0.0156	5.79%	2.75%	6.41%	2.333
032.41	Potassium, ICP, Dry ash (%)	11	11	0.3173	0.0171	0.0162	0.0077	0.0179	5.10%	2.42%	5.65%	2.334
032.43	Potassium, ICP, Microwave (%)	20	19	0.3165	0.0200	0.0187	0.0100	0.0212	5.91%	3.18%	6.71%	2.112

Test Material Code # 202342

Issue Date : 06/30/2023

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
032.44	Potassium, ICP, Dry ash (%)	24	23	0.2915	0.0131	0.0103	0.0084	0.0133	3.54%	2.91%	4.58%	1.577
035.41	Sodium, ICP, Dry ash (%)	33	24	0.0095	0.0054	0.0053	0.0019	0.0057	55.60%	19.76%	59.00%	2.986
035.43	Sodium, ICP, Microwave (%)	15	7	0.0018	0.0020	0.0005	0.0004	0.0007	49.82%	40.60%	64.27%	1.583
036.43	Sulfur, ICP, Microwave (%)	8	7	0.1043	0.0188	0.0024	0.0039	0.0046	2.42%	4.01%	4.68%	1.168
037.41	Zinc, ICP, Dry ash (ppm)	14	13	16.81	6.143	3.568	2.670	4.457	19.74%	14.77%	24.65%	1.669
037.43	Zinc, ICP, Microwave (ppm)	16	14	17.42	6.459	4.823	0.4772	4.847	25.76%	2.55%	25.89%	10.16

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