AAFCO Proficiency Testing Program

ANAB ACCREDITED ISO/IEC 17043 PROFICIENCY TESTING PROVIDER

AAFCO PTP Pet Food Ingredient Scheme

Pet Food Ingredient Scheme

 # Labs Reporting: 62

Fish Meal

Method Summary Report

 # Methods Reported: 271

Test Material Code # 202142

(Precision Report Follows)

Issue Date : 06/30/2021

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	21	**21**	5.457	0.2633	**5.477**	0.1899	0.0518	3.47%	0.1291	3.10%
001.99	Loss on Drying, Miscellaneous (%)	9	**8**	5.266	0.2266	**5.266**	0.2569	0.1135	4.88%	0.0975	3.11%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	2	2	5.235	0.2973						
001.03	Loss on Drying, Low temp. methods (%)	2	2	5.483	0.4490						
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	51	**50**	65.00	0.7805	**65.05**	0.6809	0.1204	1.05%	0.5047	1.24%
002.01	Protein, Crude, Auto Kjel-Foss (%)	4	3	64.84	0.3574	64.84	0.3574	0.2527	0.55%	0.8193	1.24%
002.04	Protein, Crude, Copper Catalyst (%)	2	2	64.98	0.3889						
002.11	Protein, Crude, NIR (%)	2	2	65.35	1.138						
002.00	Protein, Crude, Crude (%)	1	1	64.47							
002.05	Protein, Crude, Copper, Boric Acid (%)	1	1	64.03							
002.08	Protein, Crude, Cu/Ti (%)	1	1	64.13							
003.10	Fat, Crude, Randall, Pet Ether (%)	10	**9**	7.437	0.2215	**7.463**	0.1862	0.0776	2.50%	0.1164	2.96%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	8	**8**	7.107	1.130	**7.047**	1.141	0.5041	16.19%	0.2872	2.98%
003.14	Fat, Crude, Ankom (%)	7	**7**	7.683	0.2261	**7.683**	0.2564	0.1212	3.34%	0.1178	2.94%
003.06	Fat, Crude, Pet Ether (%)	3	3	8.060	0.8116	8.060	0.8116	0.4686	10.07%	0.0467	2.92%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	3	3	8.107	0.9223	8.107	0.9223	0.5325	11.38%	0.2333	2.92%
003.11	Fat, Crude, NIR (%)	2	2	8.533	0.5127						
003.13	Fat, Crude, Randall, Hexane Ext. (%)	2	2	7.592	0.1017						
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	6.780							
003.12	Fat, Crude, Hexane Ext (%)	1	1	7.625							
004.07	Fiber, Crude, ANKOM (%)	7	5	0.3304	0.2289	0.3304	0.2289	0.1279	69.26%	0.0367	4.73%
004.00	Fiber, Crude, Asbestos Free (%)	5	3	0.3424	0.0205	0.3424	0.0205	0.0118	5.99%	0.0316	4.70%
004.11	Fiber, Crude, NIR (%)	1	1	0.1450							
004.06	Fiber, Crude, Fibertec (%)	1		0.1000							
005.00	Ash, 2h @ 600°C (%)	39	**38**	21.70	0.2169	**21.69**	0.2269	0.0460	1.05%	0.1859	2.15%
005.05	Ash, 3h @ 550°C (%)	7	**7**	21.87	0.1502	**21.87**	0.1704	0.0805	0.78%	0.2336	2.14%
005.99	Ash, Miscellaneous (%)	4	4	21.90	0.3864	21.90	0.3864	0.1932	1.76%	0.2860	2.14%
005.11	Ash, NIR (%)	2	2	16.74	4.741						
005.03	Ash, Microwave furnace (%)	1	1	21.90							

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006.00	Total Sugars, As sucrose (%)	1		0.0100							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	5	5	2.674	1.228	2.674	1.228	0.5494	45.93%	0.2144	3.45%
008.02	Fiber, Acid Detergent, Crucible (%)	2	2	2.262	1.426						
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	4	3	14.73	6.695	14.73	6.695	3.865	45.47%	0.4867	2.61%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	10.76							
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	1	1	3.277							
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	4.675							
010.11	Moisture, NIR (%)	2	2	5.703	1.177						
010.03	Moisture, Karl-Fischer (%)	1	1	5.510							
010.99	Moisture, Miscellaneous (%)	1	1	5.400							
011.01	Loss on Drying, HT, 135°C 2hr (%)	17	**17**	5.942	0.2907	**5.953**	0.3041	0.0922	5.11%	0.0872	3.06%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	2	2	5.775	0.3889						
011.03	Loss on Drying, HT, 130°C, 1 hour, Flour (%)	1	1	5.200							
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	4	4	0.9953	0.6506	0.9953	0.6506	0.3253	65.36%	0.2094	4.00%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	2	2	0.5630	0.4073						
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	1	1	0.4500							
012.11	Starch, NIR (%)	1	1	1.163							
012.00	Starch, Polarimetric (Ewers) (%)	1		1.000							
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	10	**10**	7.558	1.329	**7.558**	1.507	0.5958	19.94%	0.3126	2.95%
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	9	**9**	9.126	0.3651	**9.126**	0.4140	0.1725	4.54%	0.1459	2.87%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	5	5	7.984	0.7868	7.984	0.7868	0.3518	9.85%	0.5681	2.93%
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	2	2	8.230	0.5021						
015.43	Aluminum, ICP, Microwave (ppm)	4	4	468.1	69.87	468.1	69.87	34.94	14.93%	48.00	6.34%
015.41	Aluminum, ICP, Dry ash (ppm)	2	2	398.5	69.28						
015.53	Aluminum, ICP-MS, Microwave (ppm)	2	2	626.1	91.14						
017.43	Boron, ICP, Microwave (ppm)	3	3	6.214	0.7245	6.214	0.7245	0.4183	11.66%	0.1113	12.15%
017.53	Boron, ICP-MS, Microwave (ppm)	2	2	3.983	0.4851						
017.41	Boron, ICP, Dry ash (ppm)	1	1	4.981							
019.43	Calcium, ICP, Microwave (%)	13	**13**	5.229	0.2638	**5.239**	0.2748	0.0953	5.24%	0.1900	3.12%
019.44	Calcium, ICP, Dry ash (%)	10	**10**	5.270	0.3481	**5.220**	0.2593	0.1025	4.97%	0.3282	3.12%
019.41	Calcium, ICP, Dry ash (%)	9	**9**	5.326	0.3216	**5.288**	0.2698	0.1124	5.10%	0.1275	3.11%
019.31	Calcium, AAS, Dry ash (%)	3	3	5.550	0.5765	5.550	0.5765	0.3329	10.39%	0.0987	3.09%
019.99	Calcium, Miscellaneous (%)	3	3	5.169	0.4535	5.169	0.4535	0.3207	8.77%	0.1150	3.12%
019.42	Calcium, ICP, Open vessel (%)	2	2	5.858	0.0895						
019.53	Calcium, ICP-MS, Microwave (%)	2	2	4.921	0.0768						
019.52	Calcium, ICP-MS, Open vessel (%)	1	1	5.175							
021.53	Cobalt, ICP-MS, Microwave (ppm)	3	3	0.4066	0.1201	0.4066	0.1201	0.0693	29.53%	0.0110	18.32%
021.41	Cobalt, ICP, Dry ash (ppm)	2	2	0.4229	0.3930						
021.43	Cobalt, ICP, Microwave (ppm)	2	2	0.7468	0.4056						
021.31	Cobalt, AAS, Dry ash (ppm)	1	1	5.200							

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022.43	Copper, ICP, Microwave (ppm)	11	**10**	5.234	0.5200	**5.155**	0.3851	0.1522	7.47%	0.1751	12.50%
022.41	Copper, ICP, Dry ash (ppm)	5	4	7.123	2.930	7.123	2.930	1.465	41.13%	0.3700	11.90%
022.42	Copper, ICP, Open vessel (ppm)	2	2	5.252	1.058						
022.53	Copper, ICP-MS, Microwave (ppm)	2	2	5.239	0.2847						
022.31	Copper, AAS, Dry ash (ppm)	2	1	8.740							
022.33	Copper, AAS, Microwave (ppm)	1	1	7.550							
022.44	Copper, ICP, Dry ash (ppm)	1	1	6.000							
022.52	Copper, ICP-MS, Open vessel (ppm)	1	1	4.305							
022.99	Copper, Miscellaneous (ppm)	1	1	4.000							
023.01	Fluorine, Ion Sel Elect (ppm)	1		5.000							
025.43	Iron, ICP, Microwave (ppm)	10	**10**	752.2	61.17	**752.2**	69.36	27.42	9.22%	28.52	5.90%
025.41	Iron, ICP, Dry ash (ppm)	6	**6**	630.2	104.6	**650.5**	67.66	34.53	10.40%	29.91	6.03%
025.31	Iron, AAS, Dry ash (ppm)	3	3	695.0	123.1	695.0	123.1	71.04	17.71%	27.20	5.97%
025.42	Iron, ICP, Open vessel (ppm)	2	2	725.5	19.76						
025.53	Iron, ICP-MS, Microwave (ppm)	2	2	802.0	79.24						
025.52	Iron, ICP-MS, Open vessel (ppm)	1	1	837.1							
025.99	Iron, Miscellaneous (ppm)	1	1	611.0							
027.43	Magnesium, ICP, Microwave (%)	12	**12**	0.2146	0.0176	**0.2143**	0.0185	0.0067	8.65%	0.0066	5.04%
027.44	Magnesium, ICP, Dry ash (%)	10	**10**	0.2273	0.0091	**0.2269**	0.0093	0.0037	4.11%	0.0184	5.00%
027.41	Magnesium, ICP, Dry ash (%)	9	**9**	0.2176	0.0181	**0.2180**	0.0142	0.0059	6.52%	0.0054	5.03%
027.31	Magnesium, AAS, Dry ash (%)	3	3	0.2207	0.0289	0.2207	0.0289	0.0167	13.09%	0.0036	5.02%
027.42	Magnesium, ICP, Open vessel (%)	2	2	0.2420	0.0184						
027.53	Magnesium, ICP-MS, Microwave (%)	2	2	0.2176	0.0084						
027.99	Magnesium, Miscellaneous (%)	2	2	0.2125	0.0248						
027.52	Magnesium, ICP-MS, Open vessel (%)	1	1	0.2200							
028.43	Manganese, ICP, Microwave (ppm)	11	**10**	32.81	2.036	**32.89**	2.108	0.8334	6.41%	1.139	9.46%
028.41	Manganese, ICP, Dry ash (ppm)	5	5	31.63	1.427	31.63	1.427	0.6381	4.51%	0.8606	9.51%
028.31	Manganese, AAS, Dry ash (ppm)	3	3	33.74	2.250	33.74	2.250	1.299	6.67%	0.6567	9.42%
028.42	Manganese, ICP, Open vessel (ppm)	2	2	32.82	3.787						
028.44	Manganese, ICP, Dry ash (ppm)	2	2	35.14	3.030						
028.53	Manganese, ICP-MS, Microwave (ppm)	2	2	32.85	0.8478						
028.52	Manganese, ICP-MS, Open vessel (ppm)	1	1	41.78							
028.99	Manganese, Miscellaneous (ppm)	1	1	34.00							
031.43	Phosphorus, ICP, Microwave (%)	14	**14**	3.230	0.1452	**3.235**	0.1398	0.0467	4.32%	0.1232	3.35%
031.44	Phosphorus, ICP, Dry ash (%)	10	**10**	3.183	0.1168	**3.183**	0.1324	0.0523	4.16%	0.1881	3.36%
031.41	Phosphorus, ICP, Dry ash (%)	9	**9**	3.044	0.7034	**3.232**	0.2175	0.0906	6.73%	0.0343	3.35%
031.42	Phosphorus, ICP, Open vessel (%)	3	3	3.501	0.0874	3.501	0.0874	0.0505	2.50%	0.0953	3.31%
031.99	Phosphorus, Miscellaneous (%)	3	3	2.915	0.6937	2.915	0.6937	0.4005	23.80%	0.0433	3.40%
031.53	Phosphorus, ICP-MS, Microwave (%)	2	2	3.073	0.4003						
031.01	Phosphorus, Photometric (%)	1	1	3.155							

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031.03	Phosphorus, Autoanalyzer (%)	1	1	3.302							
032.43	Potassium, ICP, Microwave (%)	14	**14**	1.204	0.0773	**1.211**	0.0706	0.0236	5.83%	0.0196	3.89%
032.41	Potassium, ICP, Dry ash (%)	11	**11**	1.183	0.0658	**1.181**	0.0707	0.0266	5.99%	0.0345	3.90%
032.44	Potassium, ICP, Dry ash (%)	9	**9**	1.209	0.0463	**1.209**	0.0514	0.0214	4.26%	0.0747	3.89%
032.31	Potassium, AAS, Dry ash (%)	4	4	1.173	0.1399	1.173	0.1399	0.0808	11.93%	0.0090	3.90%
032.42	Potassium, ICP, Open vessel (%)	3	3	1.300	0.0623	1.300	0.0623	0.0360	4.79%	0.0680	3.84%
032.53	Potassium, ICP-MS, Microwave (%)	2	2	1.150	0.0064						
032.99	Potassium, Miscellaneous (%)	2	2	1.228	0.0530						
033.01	Salt as chloride, Poten Cl (%)	6	**6**	1.625	0.3665	**1.625**	0.4156	0.2121	25.57%	0.0122	3.72%
033.00	Salt as chloride, Sol Cl (%)	2	2	1.800	0.0426						
033.99	Salt, Miscellaneous (%)	1	1	1.840							
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	5	5	2.507	0.5103	2.507	0.5103	0.2282	20.36%	0.1271	13.93%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	2	2	2.405	0.2758						
034.04	Selenium, Total (Se), AA, Hydride (ppm)	1	1	1.710							
034.51	Selenium, Total (Se), ICP-MS, Dry Ash (ppm)	1	1	2.230							
035.41	Sodium, ICP, Dry ash (%)	19	**19**	1.057	0.0617	**1.057**	0.0623	0.0179	5.89%	0.0512	3.97%
035.43	Sodium, ICP, Microwave (%)	12	**12**	1.044	0.0527	**1.045**	0.0587	0.0212	5.62%	0.0130	3.97%
035.31	Sodium, AAS, Dry ash (%)	2	2	1.014	0.0937						
035.42	Sodium, ICP, Open vessel (%)	2	2	1.152	0.0615						
035.53	Sodium, ICP-MS, Microwave (%)	2	2	0.9878	0.0371						
035.99	Sodium, Miscellaneous (%)	2	2	0.5800	0.6647						
036.43	Sulfur, ICP, Microwave (%)	7	**7**	0.9322	0.0450	**0.9322**	0.0510	0.0241	5.47%	0.0168	4.04%
036.42	Sulfur, ICP, Open vessel (%)	4	4	0.9181	0.0133	0.9181	0.0133	0.0067	1.45%	0.0050	4.05%
036.99	Sulfur, Miscellaneous (%)	2	2	0.8350	0.0212						
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.9025							
037.43	Zinc, ICP, Microwave (ppm)	11	**11**	89.78	3.039	**89.57**	2.402	0.9052	2.68%	3.311	8.13%
037.41	Zinc, ICP, Dry ash (ppm)	6	**6**	79.54	8.076	**79.54**	9.158	4.674	11.51%	1.932	8.28%
037.31	Zinc, AAS, Dry ash (ppm)	3	3	94.28	21.93	94.28	21.93	12.66	23.26%	5.257	8.07%
037.42	Zinc, ICP, Open vessel (ppm)	2	2	91.18	5.409						
037.53	Zinc, ICP-MS, Microwave (ppm)	2	2	87.65	3.188						
037.99	Zinc, Miscellaneous (ppm)	2	2	87.16	1.641						
037.33	Zinc, AAS, Microwave (ppm)	1	1	90.00							
037.52	Zinc, ICP-MS, Open vessel (ppm)	1	1	98.73							
038.53	Molybdenum, ICP-MS, Microwave (ppm)	4	3	0.8459	0.0956	0.8459	0.0956	0.0552	11.30%	0.0035	16.40%
038.41	Molybdenum, ICP, Dry ash (ppm)	2	2	0.5793	0.1050						
038.43	Molybdenum, ICP, Microwave (ppm)	2	2	0.6560	0.0085						
040.53	Barium, ICP-MS, Microwave (ppm)	3	3	14.24	0.3159	14.24	0.3159			0.4174	10.73%
041.53	Vanadium, ICP-MS, Microwave (ppm)	2	2	5.029	0.0622						
101.02	Choline Chloride, LC (ppm)	1	1	3,265							
102.01	Niacin, Microbiological (ppm)	1	1	136.5							

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102.02	Niacin, LC (ppm)	1	1	83.20							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	15.20							
103.02	Pantothenic Acid, LC (ppm)	1	1	19.75							
104.00	Riboflavin, Fluorometric (ppm)	2	2	3.930	3.649						
104.03	Riboflavin, LC (ppm)	2	2	1.435	0.3748						
105.00	Thiamine, LC (ppm)	3	1								
105.01	Thiamine, Fluorometer (ppm)	1		0.0870							
106.02	Vitamin A, LC (KU / kg)	2	2	0.7948	0.0138						
107.00	Vitamin B12, Microbiological (ppb)	1	1	176.0							
108.02	Vitamin D3, LC (KU / kg)	1	1	2.480							
109.02	Vitamin E, LC (IU / kg)	4	3	9.890	4.734	9.890	4.734	2.733	47.87%	0.2467	
112.01	Pyridoxine, LC (µg / g)	3	1								
113.99	Folic acid, Miscellaneous (ppm)	1	1	0.5180							
114.01	Biotin, Microbiological (ppm)	1	1	0.3835							
114.99	Biotin, Miscellaneous (ppm)	1		0.5000							
120.00	Alanine, Post-col Ninhydrin Der (%)	5	5	4.164	0.2122	4.164	0.2122	0.0949	5.10%	0.0564	3.23%
120.99	Alanine, Miscellaneous (%)	3	3	3.750	0.4854	3.750	0.4854	0.2802	12.94%	0.0600	3.28%
120.05	Alanine, Pre-col AQC Der (%)	2	2	4.149	0.0576						
121.00	Arginine, Post-col Ninhydrin Der (%)	5	4	3.852	0.0383	3.852	0.0383	0.0191	0.99%	0.0579	3.26%
121.99	Arginine, Miscellaneous (%)	3	3	3.815	0.1434	3.815	0.1434	0.0828	3.76%	0.0900	3.27%
121.05	Arginine, Pre-col AQC Der (%)	2	2	4.112	0.3072						
122.00	Aspartic, Post-col Ninhydrin Der (%)	5	5	5.691	0.0684	5.691	0.0684	0.0306	1.20%	0.0761	3.08%
122.99	Aspartic, Miscellaneous (%)	3	3	5.480	0.2345	5.480	0.2345	0.1354	4.28%	0.0400	3.10%
122.05	Aspartic, Pre-col AQC Der (%)	2	2	5.643	1.312						
124.00	Cysteine/Cystine, PAO Post-col Ninhydri (%)	7	**7**	0.5063	0.0653	**0.5063**	0.0739	0.0349	14.59%	0.0083	4.43%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	2	2	0.6029	0.0465						
124.99	Cysteine/Cystine, Miscellaneous (%)	1	1	0.5400							
125.00	Glutamic, Post-col Ninhydrin Der (%)	5	4	8.236	0.1124	8.236	0.1124	0.0562	1.36%	0.0313	2.91%
125.99	Glutamic, Miscellaneous (%)	3	3	7.078	1.042	7.078	1.042	0.6017	14.72%	0.0833	2.98%
125.05	Glutamic, Pre-col AQC Der (%)	2	2	7.618	0.1874						
126.00	Glycine, Post-col Ninhydrin Der (%)	5	5	5.315	0.1395	5.315	0.1395	0.0624	2.62%	0.0585	3.11%
126.99	Glycine, Miscellaneous (%)	3	3	3.993	2.447	3.993	2.447	1.413	61.28%	0.1467	3.25%
126.05	Glycine, Pre-col AQC Der (%)	2	2	5.789	0.8606						
127.00	Histidine, Post-col Ninhydrin Der (%)	5	5	1.599	0.0567	1.599	0.0567	0.0254	3.55%	0.0116	3.73%
127.99	Histidine, Miscellaneous (%)	3	3	1.412	0.2065	1.412	0.2065	0.1192	14.63%	0.0367	3.80%
127.05	Histidine, Pre-col AQC Der (%)	2	2	1.589	0.2178						
128.00	Isoleucine, Post-col Ninhydrin Der (%)	5	5	2.390	0.1517	2.390	0.1517	0.0678	6.34%	0.0396	3.51%
128.99	Isoleucine, Miscellaneous (%)	3	3	2.283	0.4120	2.283	0.4120	0.2379	18.04%	0.0133	3.53%
128.05	Isoleucine, Pre-col AQC Der (%)	2	2	2.647	0.2288						
129.00	Leucine, Post-col Ninhydrin Der (%)	5	5	4.304	0.1811	4.304	0.1811	0.0810	4.21%	0.0577	3.21%

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
129.99	Leucine, Miscellaneous (%)	3	3	4.095	0.4044	4.095	0.4044	0.2335	9.87%	0.0500	3.24%
129.05	Leucine, Pre-col AQC Der (%)	2	2	4.518	0.0958						
130.00	L-Lysine, Post-col Ninhydrin Der (%)	5	5	4.879	0.1797	4.879	0.1797	0.0804	3.68%	0.0546	3.15%
130.99	L-Lysine, Miscellaneous (%)	3	3	3.927	1.262	3.927	1.262	0.7285	32.13%	0.0333	3.26%
130.05	L-Lysine, Pre-col AQC Der (%)	2	2	4.524	0.3758						
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	7	**7**	1.639	0.1172	**1.638**	0.1329	0.0628	8.11%	0.0219	3.71%
131.05	Methionine, PAO Pre-col AQC Der (%)	2	2	1.570	0.1416						
131.99	Methionine, Miscellaneous (%)	1	1	0.8300							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	5	5	2.420	0.1319	2.420	0.1319	0.0590	5.45%	0.0310	3.50%
132.99	Phenylalanine, Miscellaneous (%)	3	3	2.482	0.1825	2.482	0.1825	0.1054	7.35%	0.0300	3.49%
132.05	Phenylalanine, Pre-col AQC Der (%)	2	2	2.709	0.3875						
133.00	Proline, Post-col Ninhydrin Der (%)	5	4	3.084	0.0676	3.084	0.0676	0.0338	2.19%	0.0442	3.38%
133.99	Proline, Miscellaneous (%)	3	3	3.045	0.2983	3.045	0.2983	0.1722	9.80%	0.0300	3.38%
133.05	Proline, Pre-col AQC Der (%)	2	2	3.518	0.1877						
134.00	Serine, Post-col Ninhydrin Der (%)	5	4	2.650	0.0814	2.650	0.0814	0.0407	3.07%	0.0240	3.45%
134.05	Serine, Pre-col AQC Der (%)	2	2	2.187	0.0191						
134.99	Serine, Miscellaneous (%)	2	2	2.818	0.4985						
135.00	Threonine, Post-col Ninhydrin Der (%)	5	5	2.655	0.0560	2.655	0.0560	0.0251	2.11%	0.0647	3.45%
135.99	Threonine, Miscellaneous (%)	3	3	2.338	0.2040	2.338	0.2040	0.1178	8.73%	0.0767	3.52%
135.05	Threonine, Pre-col AQC Der (%)	2	2	2.548	0.0880						
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	4	4	0.5370	0.0629	0.5370	0.0629	0.0315	11.72%	0.0053	4.39%
136.99	Tryptophan, Miscellaneous (%)	3	3	0.9633	0.5197	0.9633	0.5197	0.3000	53.94%	0.0333	4.02%
136.03	Tryptophan, Alka-Hydrol + IS RP LC Fl (%)	1	1	0.6230							
136.05	Tryptophan, Pre-col AQC Der (%)	1	1	0.5275							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	5	4	1.807	0.3963	1.807	0.3963	0.1982	21.94%	0.0092	3.66%
137.99	Tyrosine, Miscellaneous (%)	3	3	1.783	0.2034	1.783	0.2034	0.1174	11.40%	0.0100	3.67%
137.05	Tyrosine, Pre-col AQC Der (%)	2	2	2.087	0.0446						
138.00	Valine, Post-col Ninhydrin Der (%)	5	5	2.866	0.1516	2.866	0.1516	0.0678	5.29%	0.0493	3.41%
138.99	Valine, Miscellaneous (%)	3	3	2.883	0.1546	2.883	0.1546	0.0892	5.36%	0.0617	3.41%
138.05	Valine, Pre-col AQC Der (%)	2	2	3.314	0.1609						
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.6993	0.0435						
139.05	Taurine, Pre-col AQC Der (%)	2	2	0.3368	0.4713						
139.99	Taurine, Miscellaneous (%)	2	2	0.4913	0.3518						
160.99	Fructose, Miscellaneous (%)	1		0.1500							
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		0.1500							
166.99	Raffinose, Miscellaneous (%)	1		0.0500							
167.99	Stachyose, Miscellaneous (%)	1		0.0500							

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Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
353.99	Coumaphos, Miscellaneous (ppm)	1	1	360.5							
400.01	Water Activity, Aqualab chilled mirror (Units)	1	1	0.4075							
400.99	Water Activity, Miscellaneous (Units)	1	1	0.3900							
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	5	5	5.707	0.3520	5.707	0.3520	0.1574	6.17%	0.1643	12.31%
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	2	2	5.769	0.3054						
516.00	Arsenic, Total (As), AA, Hydride (ppm)	1	1	5.025							
518.53	Cadmium, ICP-MS, Microwave (ppm)	5	5	0.0393	0.0015	0.0393	0.0015	0.0007	3.79%	0.0010	22.00%
518.41	Cadmium, ICP, Dry ash (ppm)	2	2	0.0562	0.0087						
518.43	Cadmium, ICP, Microwave (ppm)	2	1	0.0479							
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	4	4	4.208	0.3906	4.208	0.3906	0.1953	9.28%	0.4207	12.89%
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	3	3	3.818	0.5506	3.818	0.5506	0.3179	14.42%	0.1445	13.08%
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	2	2	3.309	0.4797						
526.53	Lead, ICP-MS, Microwave (ppm)	5	5	1.004	0.0549	1.004	0.0549	0.0246	5.47%	0.0381	15.99%
526.41	Lead, ICP, Dry ash (ppm)	2	2	0.6762	0.1926						
526.43	Lead, ICP, Microwave (ppm)	1	1	0.9557							
529.99	Mercury, Miscellaneous (ppb)	3	3	55.89	4.273	55.89	4.273	2.467	7.65%	2.076	22.00%
539.53	Nickel, ICP-MS, Microwave (ppm)	3	3	2.561	1.073	2.561	1.073	0.6194	41.90%	0.0581	13.89%
539.41	Nickel, ICP, Dry ash (ppm)	2	2	1.407	0.0377						
539.43	Nickel, ICP, Microwave (ppm)	1	1	1.482							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	2	1	0.0070							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	2	2	0.5500	0.0849						
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	2	2	1.498	0.1450						
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	3	3	0.7302	0.0569	0.7302	0.0569	0.0329	7.79%	0.0083	4.19%
720.99	Margaric acid (17:0), Miscellaneous (% (w/w))	1	1	0.0550							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.3350							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	2	2	0.3650	0.0000						
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	3	3	0.1290	0.0296	0.1290	0.0296	0.0171	22.91%	0.0047	5.44%
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	3	3	0.0998	0.0180	0.0998	0.0180	0.0104	17.99%	0.0043	5.66%
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0300							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	2	2	0.0988	0.0195						
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (% (w/w	2	2	0.7648	0.1057						
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	2	2	0.0150	0.0071						
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1	1	0.0100							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (%	2	2	0.1380	0.0184						
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0200							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (%	2	2	1.049	0.1262						
752.99	Nervonic Acid (24:1) isomers, Miscellaneous (% (w/w))	1	1	0.0350							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w))	3	3	3.798	2.494	3.798	2.494	1.440	65.65%	0.1100	3.27%
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	3	3	0.9317	1.016	0.9317	1.016	0.7186	109.07%	0.0967	4.04%
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	2.800							

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770.99	Total Fat (equivalent to NLEA), Miscellaneous (% (w/w))	1	1	7.645							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	1	1	7.310							

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.

AAFCO Proficiency Testing Program

ANAB ACCREDITED ISO/IEC 17043 PROFICIENCY TESTING PROVIDER

AAFCO PTP Pet Food Ingredient Scheme

Pet Food Ingredient Scheme

Fish Meal

Test Material Code # 202142

Method Precision Report

 # Methods Reported: 52

 # Labs Reporting: 62

Issue Date : 06/30/2021

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 (%)	21	19	5.457	0.2633	0.1738	0.1056	0.2034	3.18%	1.93%	3.72%	1.925
001.99	Loss on Drying, Miscellaneous (%)	9	7	5.266	0.2266	0.2276	0.0577	0.2348	4.34%	1.10%	4.48%	4.069
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	51	48	65.00	0.7805	0.5419	0.4692	0.7168	0.83%	0.72%	1.10%	1.528
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	8	7	7.107	1.130	1.071	0.1707	1.084	14.68%	2.34%	14.87%	6.353
003.10	Fat, Crude, Randall, Pet Ether (%)	10	8	7.437	0.2215	0.1219	0.0827	0.1473	1.63%	1.10%	1.96%	1.782
003.14	Fat, Crude, Ankom (%)	7	7	7.683	0.2261	0.2159	0.0951	0.2359	2.81%	1.24%	3.07%	2.480
004.07	Fiber, Crude, ANKOM (%)	7	5	0.3304	0.2289	0.2275	0.0347	0.2302	68.86%	10.49%	69.66%	6.638
005.00	Ash, 2h @ 600°C (%)	39	36	21.70	0.2169	0.1787	0.1458	0.2306	0.82%	0.67%	1.06%	1.582
005.05	Ash, 3h @ 550°C (%)	7	7	21.87	0.1502	0.0704	0.1877	0.2005	0.32%	0.86%	0.92%	1.068
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	5	5	2.674	1.228	1.219	0.2128	1.238	45.59%	7.96%	46.28%	5.815
011.01	Loss on Drying, HT, 135°C 2hr (%)	17	17	5.942	0.2907	0.2854	0.0776	0.2958	4.80%	1.31%	4.98%	3.812
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	10	10	7.558	1.329	1.313	0.2946	1.345	17.37%	3.90%	17.80%	4.566
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	9	9	9.126	0.3651	0.3539	0.1268	0.3760	3.88%	1.39%	4.12%	2.965
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	5	5	7.984	0.7868	0.6899	0.5348	0.8729	8.64%	6.70%	10.93%	1.632
019.41	Calcium, ICP, Dry ash (%)	9	7	5.326	0.3216	0.1915	0.0644	0.2021	3.68%	1.24%	3.88%	3.137
019.43	Calcium, ICP, Microwave (%)	13	13	5.229	0.2638	0.2270	0.1899	0.2960	4.34%	3.63%	5.66%	1.558
019.44	Calcium, ICP, Dry ash (%)	10	9	5.270	0.3481		0.2908			5.62%		
022.43	Copper, ICP, Microwave (ppm)	11	9	5.234	0.5200	0.2894	0.1483	0.3252	5.68%	2.91%	6.38%	2.192
025.43	Iron, ICP, Microwave (ppm)	10	10	752.2	61.17	57.92	27.82	64.25	7.70%	3.70%	8.54%	2.310
027.41	Magnesium, ICP, Dry ash (%)	9	9	0.2176	0.0181	0.0178	0.0048	0.0184	8.18%	2.20%	8.47%	3.844
027.43	Magnesium, ICP, Microwave (%)	12	12	0.2146	0.0176	0.0170	0.0061	0.0181	7.94%	2.83%	8.43%	2.978
027.44	Magnesium, ICP, Dry ash (%)	10	10	0.2273	0.0091		0.0160			7.02%		
028.41	Manganese, ICP, Dry ash (ppm)	5	5	31.63	1.427	1.322	0.7606	1.525	4.18%	2.40%	4.82%	2.005
028.43	Manganese, ICP, Microwave (ppm)	11	10	32.81	2.036	1.926	0.9326	2.140	5.87%	2.84%	6.52%	2.295
031.41	Phosphorus, ICP, Dry ash (%)	9	8	3.044	0.7034	0.1566	0.0287	0.1592	4.78%	0.88%	4.86%	5.545
031.43	Phosphorus, ICP, Microwave (%)	14	14	3.230	0.1452	0.1186	0.1185	0.1676	3.67%	3.67%	5.19%	1.415
031.44	Phosphorus, ICP, Dry ash (%)	10	10	3.183	0.1168	0.0360	0.1571	0.1612	1.13%	4.94%	5.06%	1.026
032.41	Potassium, ICP, Dry ash (%)	11	11	1.183	0.0658	0.0623	0.0300	0.0691	5.26%	2.54%	5.85%	2.302
032.43	Potassium, ICP, Microwave (%)	14	13	1.204	0.0773	0.0591	0.0147	0.0609	4.86%	1.20%	5.00%	4.154
032.44	Potassium, ICP, Dry ash (%)	9	9	1.209	0.0463		0.0657			5.44%		
033.01	Salt as chloride, Poten Cl (%)	6	6	1.625	0.3665	0.3664	0.0114	0.3666	22.55%	0.70%	22.56%	32.06
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	5	5	2.507	0.5103	0.5019	0.1306	0.5186	20.02%	5.21%	20.69%	3.970
035.41	Sodium, ICP, Dry ash (%)	19	19	1.057	0.0617	0.0494	0.0524	0.0720	4.67%	4.95%	6.81%	1.375
035.43	Sodium, ICP, Microwave (%)	12	12	1.044	0.0527	0.0520	0.0125	0.0534	4.98%	1.19%	5.12%	4.284
036.43	Sulfur, ICP, Microwave (%)	7	7	0.9322	0.0450	0.0434	0.0165	0.0465	4.66%	1.77%	4.98%	2.820
037.41	Zinc, ICP, Dry ash (ppm)	6	6	79.54	8.076	7.984	1.717	8.167	10.04%	2.16%	10.27%	4.755

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037.43	Zinc, ICP, Microwave (ppm)	11	10	89.78	3.039	0.9391	2.661	2.822	1.05%	2.99%	3.17%	1.060
120.00	Alanine, Post-col Ninhydrin Der (%)	5	5	4.164	0.2122	0.2089	0.0524	0.2154	5.02%	1.26%	5.17%	4.111
122.00	Aspartic, Post-col Ninhydrin Der (%)	5	5	5.691	0.0684	0.0492	0.0671	0.0832	0.86%	1.18%	1.46%	1.240
124.00	Cysteine/Cystine, PAO Post-col Ninhydri (%)	7	7	0.5063	0.0653	0.0650	0.0081	0.0655	12.84%	1.61%	12.94%	8.040
126.00	Glycine, Post-col Ninhydrin Der (%)	5	5	5.315	0.1395	0.1348	0.0511	0.1441	2.54%	0.96%	2.71%	2.820
127.00	Histidine, Post-col Ninhydrin Der (%)	5	5	1.599	0.0567	0.0561	0.0116	0.0573	3.51%	0.72%	3.58%	4.962
128.00	Isoleucine, Post-col Ninhydrin Der (%)	5	5	2.390	0.1517	0.1500	0.0313	0.1533	6.28%	1.31%	6.41%	4.892
129.00	Leucine, Post-col Ninhydrin Der (%)	5	5	4.304	0.1811	0.1778	0.0485	0.1843	4.13%	1.13%	4.28%	3.802
130.00	L-Lysine, Post-col Ninhydrin Der (%)	5	5	4.879	0.1797	0.1766	0.0467	0.1827	3.62%	0.96%	3.74%	3.915
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	7	6	1.639	0.1172	0.1213	0.0112	0.1218	7.47%	0.69%	7.50%	10.89
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	5	5	2.420	0.1319	0.1304	0.0283	0.1334	5.39%	1.17%	5.51%	4.716
135.00	Threonine, Post-col Ninhydrin Der (%)	5	5	2.655	0.0560	0.0385	0.0576	0.0693	1.45%	2.17%	2.61%	1.203
138.00	Valine, Post-col Ninhydrin Der (%)	5	5	2.866	0.1516	0.1489	0.0404	0.1543	5.19%	1.41%	5.38%	3.815
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	5	5	5.707	0.3520	0.3404	0.1265	0.3631	5.96%	2.22%	6.36%	2.870
518.53	Cadmium, ICP-MS, Microwave (ppm)	5	5	0.0393	0.0015	0.0013	0.0011	0.0017	3.28%	2.71%	4.25%	1.572
526.53	Lead, ICP-MS, Microwave (ppm)	5	5	1.004	0.0549	0.0486	0.0362	0.0606	4.84%	3.61%	6.04%	1.674

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