



**Pet Food Ingredient Scheme**  
**Soybean Hulls**

**Test Material Code # 201941**

**# Labs Reporting: 56**

**Method Summary Report**

(Precision Report Follows)

**# Methods Reported: 229**

**Issue Date : 03/31/2019**

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
000.99	Urea, Miscellaneous (%)	1	1	0.0965							
001.00	Loss on Drying, Vac 95°C 5 hr (%)	3	3	8.417	0.0548	8.417	0.0548	0.0316	0.65%	0.0740	2.90%
001.03	Loss on Drying, Low temp. methods (%)	2	2	8.613	0.2369						
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	15	14	8.958	0.5551	8.926	0.2181	0.0729	2.44%	0.1085	2.88%
001.99	Loss on Drying, Miscellaneous (%)	8	8	8.315	0.4712	8.387	0.3405	0.1505	4.06%	0.2225	2.90%
002.00	Protein, Crude, Crude (%)	1	1	9.565							
002.01	Protein, Crude, Auto Kjel-Foss (%)	5	5	9.952	0.2643	9.952	0.2643	0.1182	2.66%	0.1270	2.83%
002.04	Protein, Crude, Copper Catalyst (%)	2	2	10.10	0.0389						
002.05	Protein, Crude, Copper, Boric Acid (%)	2	2	9.985	0.1344						
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	48	47	10.26	0.5406	10.27	0.3124	0.0570	3.04%	0.1984	2.82%
002.11	Protein, Crude, NIR (%)	1	1	9.690							
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	6	6	0.8837	0.4017	0.8803	0.4476	0.2284	50.85%	0.2789	4.08%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	1.495							
003.06	Fat, Crude, Pet Ether (%)	4	3	1.215	0.3290	1.215	0.3290	0.1899	27.08%	0.0900	3.88%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	3	3	1.253	0.0514	1.253	0.0514	0.0297	4.10%	0.0472	3.87%
003.10	Fat, Crude, Randall, Pet Ether (%)	9	8	1.052	0.0613	1.057	0.0572	0.0253	5.41%	0.0657	3.97%
003.11	Fat, Crude, NIR (%)	1	1	0.7400							
003.12	Fat, Crude, Hexane Ext (%)	2	2	1.253	0.1732						
003.13	Fat, Crude, Randall, Hexane Ext. (%)	3	3	1.377	0.2752	1.377	0.2752	0.1946	19.98%	0.4476	3.81%
003.14	Fat, Crude, Ankom (%)	9	9	1.051	0.2627	0.9904	0.1225	0.0511	12.37%	0.1182	4.01%
004.00	Fiber, Crude, Asbestos Free (%)	7	6	37.41	1.535	37.22	1.275	0.6506	3.43%	0.3559	1.64%
004.03	Fiber, Crude, Fritted Glass (%)	2	2	34.80	3.921						
004.06	Fiber, Crude, Fibertec (%)	4	4	36.59	1.005	36.59	1.005	0.5024	2.75%	0.2338	1.65%
004.07	Fiber, Crude, ANKOM (%)	16	15	36.79	1.338	36.70	0.9943	0.3209	2.71%	0.2686	1.65%
004.11	Fiber, Crude, NIR (%)	1	1	32.41							
005.00	Ash, 2h @ 600°C (%)	40	39	4.471	0.1355	4.476	0.1093	0.0219	2.44%	0.0610	3.19%
005.03	Ash, Microwave furnace (%)	1	1	4.500							
005.05	Ash, 3h @ 550°C (%)	5	5	4.590	0.1321	4.590	0.1321	0.0591	2.88%	0.0313	3.18%
005.11	Ash, NIR (%)	1	1	4.150							
005.99	Ash, Miscellaneous (%)	2	2	4.333	0.0460						

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006.00	Total Sugars, As sucrose (%)	1	1	2.177							
007.00	Urease, Act pH Chng (%)	1	1	0.2850							
008.02	Fiber, Acid Detergent, Crucible (%)	3	3	45.76	1.564	45.76	1.564	0.9031	3.42%	0.5437	1.48%
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	7	6	44.96	1.274	44.96	1.445	0.7374	3.21%	0.2634	1.49%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	1	1	47.10							
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	59.95							
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	2	2	63.50	3.235						
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	7	7	60.05	1.146	60.05	1.299	0.6139	2.16%	0.4018	1.29%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	59.02							
010.11	Moisture, NIR (%)	1	1	8.730							
010.99	Moisture, Miscellaneous (%)	4	4	9.190	0.5112	9.190	0.5112	0.2556	5.56%	0.2063	2.86%
011.01	Loss on Drying, 135°C 2hr (%)	21	21	9.298	0.2148	9.322	0.1820	0.0496	1.95%	0.1458	2.86%
011.02	Loss on Drying, 130°C for 2 hours (%)	2	2	8.583	0.6046						
012.00	Starch, Polarimetric (Ewers) (%)	1	1	5.480							
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	4	3	0.4704	0.3175	0.4704	0.3175	0.2245	67.50%	0.0063	4.48%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	3	3	0.3733	0.2290	0.3733	0.2290	0.1322	61.33%	0.0467	4.64%
012.11	Starch, NIR (%)	1	1	3.480							
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	6	6	2.157	0.5721	2.157	0.6487	0.3310	30.07%	0.1163	3.56%
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	12	12	2.253	0.3538	2.253	0.4012	0.1448	17.81%	0.1935	3.54%
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	3	3	1.423	0.4629	1.423	0.4629	0.2672	32.52%	0.0733	3.79%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	2	2	2.131	0.3773						
015.41	Aluminum, ICP, Dry ash (mg / kg (ppm))	3	3	114.0	38.43	114.0	38.43	22.19	33.71%	1.720	7.84%
015.43	Aluminum, ICP, Microwave (mg / kg (ppm))	2	2	76.87	1.595						
015.53	Aluminum, ICP-MS, Microwave (mg / kg (ppm))	1	1	97.30							
017.41	Boron, ICP, Dry ash (mg / kg (ppm))	1	1	19.40							
017.43	Boron, ICP, Microwave (mg / kg (ppm))	2	2	19.46	0.7708						
017.53	Boron, ICP-MS, Microwave (mg / kg (ppm))	1	1	22.25							
019.31	Calcium, AAS, Dry ash (%)	4	4	0.6695	0.0356	0.6695	0.0356	0.0178	5.32%	0.0153	4.25%
019.41	Calcium, ICP, Dry ash (%)	9	9	0.5683	0.0188	0.5686	0.0207	0.0086	3.64%	0.0192	4.35%
019.42	Calcium, ICP, Open vessel (%)	2	2	0.5797	0.0075						
019.43	Calcium, ICP, Microwave (%)	12	12	0.5755	0.0389	0.5744	0.0416	0.0150	7.24%	0.0091	4.35%
019.44	Calcium, ICP, Dry ash (%)	7	7	0.5348	0.0142	0.5348	0.0161	0.0076	3.01%	0.0124	4.39%
019.52	Calcium, ICP-MS, Open vessel (%)	1	1	0.6150							
019.53	Calcium, ICP-MS, Microwave (%)	1	1	0.5900							
019.99	Calcium, Miscellaneous (%)	3	3	0.5783	0.0465	0.5783	0.0465	0.0329	8.03%	0.0287	4.34%
021.31	Cobalt, AAS, Dry ash (mg / kg (ppm))	1		0.7500							
021.41	Cobalt, ICP, Dry ash (mg / kg (ppm))	3	3	0.7261	0.2023	0.7261	0.2023	0.1168	27.85%	0.0335	16.79%
021.43	Cobalt, ICP, Microwave (mg / kg (ppm))	3	3	0.8273	0.0440	0.8273	0.0440	0.0254	5.32%	0.0597	16.46%
021.52	Cobalt, ICP-MS, Open vessel (mg / kg (ppm))	2	2	0.4463	0.1361						
021.53	Cobalt, ICP-MS, Microwave (mg / kg (ppm))	3	3	0.6309	0.0947	0.6309	0.0947	0.0547	15.01%	0.1985	17.15%

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022.31	Copper, AAS, Dry ash (mg / kg (ppm))	3	3	7.137	5.245	7.137	5.245	3.708	73.49%	0.4867	11.90%
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	9	9	9.123	0.9872	9.072	1.002	0.4175	11.04%	0.3655	11.48%
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	2	2	8.968	0.0449						
022.43	Copper, ICP, Microwave (mg / kg (ppm))	10	10	8.954	0.9144	9.037	0.8310	0.3285	9.19%	0.4014	11.49%
022.44	Copper, ICP, Dry ash (mg / kg (ppm))	1	1	3.635							
022.52	Copper, ICP-MS, Open vessel (mg / kg (ppm))	1	1	10.59							
022.53	Copper, ICP-MS, Microwave (mg / kg (ppm))	2	2	7.472	1.560						
022.99	Copper, Miscellaneous (mg / kg (ppm))	2	2	8.240	1.075						
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	4	3	425.8	21.22	425.8	21.22	12.25	4.98%	4.753	6.43%
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	10	10	396.5	35.78	403.3	21.22	8.389	5.26%	13.31	6.48%
025.42	Iron, ICP, Open vessel (mg / kg (ppm))	2	2	392.2	17.40						
025.43	Iron, ICP, Microwave (mg / kg (ppm))	10	10	417.8	21.10	417.0	22.09	8.733	5.30%	8.971	6.45%
025.52	Iron, ICP-MS, Open vessel (mg / kg (ppm))	1	1	507.4							
025.53	Iron, ICP-MS, Microwave (mg / kg (ppm))	1	1	390.5							
025.99	Iron, Miscellaneous (mg / kg (ppm))	2	2	379.3	49.85						
027.31	Magnesium, AAS, Dry ash (%)	4	4	0.2606	0.0238	0.2606	0.0238	0.0119	9.14%	0.0130	4.90%
027.41	Magnesium, ICP, Dry ash (%)	10	10	0.2484	0.0124	0.2483	0.0139	0.0055	5.62%	0.0122	4.93%
027.42	Magnesium, ICP, Open vessel (%)	2	2	0.2531	0.0097						
027.43	Magnesium, ICP, Microwave (%)	12	12	0.2561	0.0173	0.2548	0.0163	0.0059	6.38%	0.0058	4.91%
027.44	Magnesium, ICP, Dry ash (%)	7	7	0.2373	0.0163	0.2396	0.0128	0.0060	5.33%	0.0061	4.96%
027.52	Magnesium, ICP-MS, Open vessel (%)	1	1	0.2750							
027.53	Magnesium, ICP-MS, Microwave (%)	1	1	0.2550							
027.99	Magnesium, Miscellaneous (%)	2	2	0.2375	0.0318						
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	4	4	24.99	1.989	24.99	1.989	0.9945	7.96%	1.610	9.86%
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	9	9	24.54	1.453	24.54	1.643	0.6846	6.70%	1.158	9.88%
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	2	2	25.53	0.6682						
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	11	11	25.47	2.415	25.53	2.617	0.9862	10.25%	1.478	9.82%
028.44	Manganese, ICP, Dry ash (mg / kg (ppm))	1	1	18.58							
028.52	Manganese, ICP-MS, Open vessel (mg / kg (ppm))	1	1	27.37							
028.53	Manganese, ICP-MS, Microwave (mg / kg (ppm))	1	1	23.50							
028.99	Manganese, Miscellaneous (mg / kg (ppm))	2	2	20.50	6.364						
031.01	Phosphorus, Photometric (%)	9	9	0.0992	0.0225	0.1056	0.0055	0.0023	5.21%	0.0038	5.61%
031.02	Phosphorus, GQMP (AOAC 935.13-Extraction) (%)	1	1	0.1100							
031.03	Phosphorus, Autoanalyzer (%)	1	1	0.1075							
031.41	Phosphorus, ICP, Dry ash (%)	9	9	0.1082	0.0067	0.1080	0.0070	0.0029	6.53%	0.0023	5.59%
031.42	Phosphorus, ICP, Open vessel (%)	3	3	0.1237	0.0233	0.1237	0.0233	0.0134	18.80%	0.0056	5.48%
031.43	Phosphorus, ICP, Microwave (%)	12	12	0.1118	0.0052	0.1118	0.0059	0.0021	5.28%	0.0022	5.56%
031.44	Phosphorus, ICP, Dry ash (%)	2	2	0.1625	0.0743						
031.53	Phosphorus, ICP-MS, Microwave (%)	1	1	0.1155							
031.99	Phosphorus, Miscellaneous (%)	3	3	0.1088	0.0068	0.1088	0.0068	0.0039	6.28%	0.0063	5.58%

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032.31	Potassium, AAS, Dry ash (%)	3	3	1.203	0.1130	1.203	0.1130	0.0652	9.39%	0.0267	3.89%
032.41	Potassium, ICP, Dry ash (%)	9	9	1.262	0.0538	1.262	0.0610	0.0254	4.84%	0.0463	3.86%
032.42	Potassium, ICP, Open vessel (%)	3	3	1.336	0.0608	1.336	0.0608	0.0351	4.55%	0.0750	3.83%
032.43	Potassium, ICP, Microwave (%)	12	12	1.272	0.0859	1.279	0.0839	0.0303	6.56%	0.0343	3.85%
032.44	Potassium, ICP, Dry ash (%)	7	7	1.160	0.1438	1.169	0.1423	0.0672	12.18%	0.0291	3.91%
032.53	Potassium, ICP-MS, Microwave (%)	1	1	1.275							
032.99	Potassium, Miscellaneous (%)	4	4	1.286	0.0873	1.286	0.0873	0.0436	6.79%	0.0435	3.85%
033.00	Salt as chloride, Sol Cl (%)	1		0.1000							
033.01	Salt as chloride, Poten Cl (%)	6	5	0.0565	0.0171	0.0565	0.0171	0.0096	30.25%	0.0102	6.16%
033.05	Salt as chloride, Ion Sel Electrode (%)	1	1	0.0450							
034.04	Selenium, AA, Hydride (mg / kg (ppm))	1		0.0500							
034.41	Selenium, ICP, Dry ash (mg / kg (ppm))	1	1	1.129							
034.43	Selenium, ICP, Microwave (mg / kg (ppm))	1		1.000							
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	3	2	0.1243	0.0103	0.1243	0.0103			0.0151	21.89%
035.31	Sodium, AAS, Dry ash (%)	3	3	0.0332	0.0055	0.0332	0.0055	0.0039	16.52%	0.0017	6.68%
035.41	Sodium, ICP, Dry ash (%)	16	16	0.0343	0.0082	0.0347	0.0081	0.0025	23.38%	0.0037	6.63%
035.42	Sodium, ICP, Open vessel (%)	2	2	0.0283	0.0025						
035.43	Sodium, ICP, Microwave (%)	11	11	0.0290	0.0029	0.0290	0.0032	0.0012	11.11%	0.0015	6.82%
035.53	Sodium, ICP-MS, Microwave (%)	1	1	0.0260							
035.99	Sodium, Miscellaneous (%)	2	1	0.0300							
036.04	Sulfur, LECO (%)	1	1	0.1540							
036.42	Sulfur, ICP, Open vessel (%)	4	4	0.1066	0.0072	0.1066	0.0072	0.0036	6.73%	0.0038	5.60%
036.43	Sulfur, ICP, Microwave (%)	7	7	0.1189	0.0063	0.1194	0.0060	0.0029	5.05%	0.0052	5.51%
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.1175							
036.99	Sulfur, Miscellaneous (%)	3	3	0.1218	0.0076	0.1218	0.0076	0.0044	6.23%	0.0043	5.49%
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	4	3	61.77	5.037	61.77	5.037	2.908	8.16%	0.4833	8.60%
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	9	9	62.61	6.595	61.80	5.411	2.255	8.76%	2.201	8.60%
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	2	2	53.87	10.08						
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	10	10	63.47	4.919	63.36	5.339	2.110	8.43%	2.101	8.57%
037.44	Zinc, ICP, Dry ash (mg / kg (ppm))	1	1	56.48							
037.52	Zinc, ICP-MS, Open vessel (mg / kg (ppm))	1	1	55.29							
037.53	Zinc, ICP-MS, Microwave (mg / kg (ppm))	2	2	65.17	2.376						
037.99	Zinc, Miscellaneous (mg / kg (ppm))	3	3	58.64	0.9815	58.64	0.9815	0.5667	1.67%	0.8067	8.67%
038.41	Molybdenum, ICP, Dry ash (mg / kg (ppm))	2	2	0.2816	0.0228						
038.43	Molybdenum, ICP, Microwave (mg / kg (ppm))	1	1	0.5000							
038.53	Molybdenum, ICP-MS, Microwave (mg / kg (ppm))	3	3	0.3097	0.0176	0.3097	0.0176	0.0102	5.68%	0.0241	19.08%
040.53	Barium, ICP-MS, Microwave (mg / kg (ppm))	1	1	4.102							
041.53	Vanadium, ICP-MS, Microwave (mg / kg (ppm))	1	1	0.1575							
042.00	Chloride, Titrimetric (%)	1	1	0.0300							
102.02	Niacin, LC (mg / kg (ppm))	1	1	17.63							

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103.02	Pantothenic Acid, LC (mg / kg (ppm))	1	1	40.81							
104.03	Riboflavin, LC (mg / kg (ppm))	1	1	0.4350							
105.00	Thiamine, LC (mg / kg (ppm))	1	1	1.925							
112.01	Pyridoxine, LC (µg / g)	1		2.500							
120.00	Alanine, Post-col Ninhydrin Der (%)	5	5	0.4132	0.0073	0.4132	0.0073	0.0033	1.77%	0.0050	4.57%
120.05	Alanine, Pre-col AQC Der (%)	2	2	0.3740	0.0120						
121.00	Arginine, Post-col Ninhydrin Der (%)	5	5	0.4598	0.0334	0.4598	0.0334	0.0149	7.25%	0.0080	4.50%
121.05	Arginine, Pre-col AQC Der (%)	2	2	0.4138	0.0173						
122.00	Aspartic, Post-col Ninhydrin Der (%)	5	5	0.8957	0.0225	0.8957	0.0225	0.0101	2.51%	0.0136	4.07%
122.05	Aspartic, Pre-col AQC Der (%)	2	2	0.8188	0.0053						
124.00	Cysteine/Cystine, PAO Post-col Ninhydry (%)	4	4	0.2030	0.0542	0.2030	0.0542	0.0271	26.67%	0.0184	5.08%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	2	2	0.3078	0.2966						
125.00	Glutamic, Post-col Ninhydrin Der (%)	5	4	1.023	0.0160	1.023	0.0160	0.0080	1.57%	0.0208	3.99%
125.05	Glutamic, Pre-col AQC Der (%)	2	2	0.9250	0.0106						
126.00	Glycine, Post-col Ninhydrin Der (%)	4	4	0.8042	0.0137	0.8042	0.0137	0.0068	1.70%	0.0086	4.13%
126.05	Glycine, Pre-col AQC Der (%)	2	2	0.7138	0.0414						
127.00	Histidine, Post-col Ninhydrin Der (%)	5	4	0.2609	0.0080	0.2609	0.0080	0.0040	3.05%	0.0114	4.90%
127.05	Histidine, Pre-col AQC Der (%)	2	2	0.2315	0.0318						
128.00	Isoleucine, Post-col Ninhydrin Der (%)	5	5	0.3701	0.0364	0.3701	0.0364	0.0163	9.83%	0.0195	4.65%
128.05	Isoleucine, Pre-col AQC Der (%)	2	2	0.3335	0.0304						
129.00	Leucine, Post-col Ninhydrin Der (%)	5	5	0.6379	0.0347	0.6379	0.0347	0.0155	5.43%	0.0150	4.28%
129.05	Leucine, Pre-col AQC Der (%)	2	2	0.5760	0.0149						
130.00	L-Lysine, Post-col Ninhydrin Der (%)	5	5	0.6732	0.0361	0.6732	0.0361	0.0162	5.37%	0.0243	4.25%
130.05	L-Lysine, Pre-col AQC Der (%)	2	2	0.6093	0.0774						
130.99	L-Lysine, Miscellaneous (%)	1	1	0.6595							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	4	3	0.1047	0.0234	0.1047	0.0234	0.0165	22.31%	0.0013	5.62%
131.05	Methionine, PAO Pre-col AQC Der (%)	2	2	0.1073	0.0018						
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	5	4	0.3694	0.0088	0.3694	0.0088	0.0051	2.39%	0.0059	4.65%
132.05	Phenylalanine, Pre-col AQC Der (%)	2	2	0.3238	0.0046						
133.00	Proline, Post-col Ninhydrin Der (%)	5	5	0.5287	0.0825	0.5287	0.0825	0.0369	15.61%	0.0189	4.40%
133.05	Proline, Pre-col AQC Der (%)	2	2	0.4673	0.0216						
134.00	Serine, Post-col Ninhydrin Der (%)	5	5	0.5636	0.0529	0.5636	0.0529	0.0236	9.38%	0.0158	4.36%
134.05	Serine, Pre-col AQC Der (%)	2	2	0.5183	0.0110						
135.00	Threonine, Post-col Ninhydrin Der (%)	5	5	0.3570	0.0086	0.3570	0.0086	0.0038	2.40%	0.0050	4.67%
135.05	Threonine, Pre-col AQC Der (%)	2	2	0.3183	0.0187						
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	3	3	0.1377	0.0155	0.1377	0.0155	0.0090	11.28%	0.0093	5.39%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	1	1	0.1000							
136.05	Tryptophan, Pre-col AQC Der (%)	1	1	0.1490							
136.99	Tryptophan, Miscellaneous (%)	1	1	0.0550							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	4	4	0.3951	0.0264	0.3951	0.0264	0.0132	6.68%	0.0087	4.60%

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
137.05	Tyrosine, Pre-col AQC Der (%)	2	2	0.3955	0.0071						
138.00	Valine, Post-col Ninhydrin Der (%)	5	5	0.4379	0.0374	0.4379	0.0374	0.0167	8.55%	0.0120	4.53%
138.05	Valine, Pre-col AQC Der (%)	2	2	0.3883	0.0166						
139.00	Taurine, Post-col Ninhydrin Der (%)	1	1	0.2550							
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0010							
160.99	Fructose, Miscellaneous (%)	2	1	0.7800							
162.99	Glucose, Miscellaneous (%)	1		0.0000							
163.99	Lactose, Miscellaneous (%)	1		0.0000							
165.99	Sucrose, Miscellaneous (%)	2	2	0.5650	0.0071						
166.99	Raffinose, Miscellaneous (%)	1	1	0.1300							
167.99	Stachyose, Miscellaneous (%)	1	1	0.5715							
400.01	Water Activity, Aqualab chilled mirror (Units)	1	1	0.3835							
516.00	Arsenic, Total, AA, Hydride (mg / kg (ppm))	1		0.0500							
516.42	Arsenic, Total, ICP, Open vessel (mg / kg (ppm))	1	1	1.194							
516.43	Arsenic, Total, ICP, Microwave (mg / kg (ppm))	1	1	0.2350							
516.53	Arsenic, Total, ICP-MS, Microwave (mg / kg (ppm))	3	3	0.0293	0.0029	0.0293	0.0029	0.0017	9.84%	0.0038	22.00%
518.41	Cadmium, ICP, Dry ash (mg / kg (ppm))	2	2	0.0657	0.0570						
518.43	Cadmium, ICP, Microwave (mg / kg (ppm))	1	1	0.1250							
518.53	Cadmium, ICP-MS, Microwave (mg / kg (ppm))	3	3	0.1149	0.0095	0.1149	0.0095	0.0055	8.22%	0.0130	22.00%
520.41	Chromium, ICP, Dry ash (mg / kg (ppm))	2	2	1.992	0.3747						
520.43	Chromium, ICP, Microwave (mg / kg (ppm))	1	1	2.655							
520.53	Chromium, ICP-MS, Microwave (mg / kg (ppm))	2	2	1.822	0.0962						
526.41	Lead, ICP, Dry ash (mg / kg (ppm))	2	1	0.1030							
526.53	Lead, ICP-MS, Microwave (mg / kg (ppm))	3	3	0.0753	0.0064	0.0753	0.0064	0.0037	8.44%	0.0043	22.00%
539.41	Nickel, ICP, Dry ash (mg / kg (ppm))	2	2	1.278	0.1593						
539.53	Nickel, ICP-MS, Microwave (mg / kg (ppm))	2	2	1.137	0.0229						
710.99	Lauric Acid (12:0), Miscellaneous (%) (w/w)	1		0.0100							
714.99	Myristic Acid (14:0), Miscellaneous (%) (w/w)	1		0.0100							
716.99	Palmitic Acid (16:0), Miscellaneous (%) (w/w)	1	1	0.1750							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (%) (w/w)	1		0.0100							
722.99	Stearic Acid (18:0), Miscellaneous (%) (w/w)	1	1	0.0650							
724.99	Oleic Acid (9c-18:1), Miscellaneous (%) (w/w)	1	1	0.2050							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (%) (w/w)	1	1	0.5800							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (%) (w/w)	1	1	0.1500							
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (%) (w/w)	1		0.0100							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (%) (w/w)	1		0.0100							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (%) (w/w)	1	1	0.1500							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (%) (w/w)	1	1	0.5800							
772.99	Total Fatty Acids, Miscellaneous (%) (w/w)	1	1	1.180							

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.

# Labs Reporting: 56

(Precision Report Follows)

Issue Date : 03/31/2019

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
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**Pet Food Ingredient Scheme**  
**Soybean Hulls**  
**Test Material Code # 201941**

**Method Precision Report**

**# Methods Reported: 27**  
**# Labs Reporting: 56**  
**Issue Date : 03/31/2019**

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 (%)	15	13	8.958	0.5551	0.3706	0.1205	0.3897	4.19%	1.36%	4.40%	3.234
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	48	44	10.26	0.5406	0.2563	0.1817	0.3142	2.50%	1.77%	3.06%	1.729
003.10	Fat, Crude, Randall, Pet Ether (%)	9	8	1.052	0.0613	0.0490	0.0521	0.0715	4.66%	4.95%	6.80%	1.373
003.14	Fat, Crude, Ankom (%)	9	8	1.051	0.2627	0.0481	0.1059	0.1163	4.97%	10.94%	12.02%	1.098
004.07	Fiber, Crude, ANKOM (%)	16	14	36.79	1.338	0.9179	0.2084	0.9413	2.51%	0.57%	2.58%	4.516
005.00	Ash, 2h @ 600°C (%)	40	37	4.471	0.1355	0.1057	0.0457	0.1151	2.36%	1.02%	2.58%	2.519
011.01	Loss on Drying, 135°C 2hr (%)	21	18	9.298	0.2148	0.1639	0.0961	0.1900	1.76%	1.03%	2.04%	1.977
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	12	11	2.253	0.3538	0.3457	0.1351	0.3712	15.17%	5.93%	16.29%	2.747
019.41	Calcium, ICP, Dry ash (%)	9	8	0.5683	0.0188	0.0148	0.0119	0.0190	2.62%	2.11%	3.37%	1.594
019.43	Calcium, ICP, Microwave (%)	12	12	0.5755	0.0389	0.0383	0.0092	0.0394	6.66%	1.60%	6.85%	4.275
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	9	9	9.123	0.9872	0.9609	0.3202	1.013	10.53%	3.51%	11.10%	3.163
022.43	Copper, ICP, Microwave (mg / kg (ppm))	10	9	8.954	0.9144	0.5531	0.4059	0.6861	6.03%	4.42%	7.48%	1.690
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	10	9	396.5	35.78	12.65	13.66	18.62	3.11%	3.36%	4.58%	1.363
025.43	Iron, ICP, Microwave (mg / kg (ppm))	10	10	417.8	21.10	20.38	7.706	21.79	4.88%	1.84%	5.22%	2.828
027.41	Magnesium, ICP, Dry ash (%)	10	9	0.2484	0.0124	0.0109	0.0104	0.0151	4.37%	4.19%	6.05%	1.445
027.43	Magnesium, ICP, Microwave (%)	12	11	0.2561	0.0173	0.0122	0.0050	0.0132	4.83%	1.98%	5.22%	2.635
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	9	9	24.54	1.453	1.276	0.9821	1.610	5.20%	4.00%	6.56%	1.640
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	11	10	25.47	2.415	2.395	1.071	2.624	9.45%	4.22%	10.35%	2.451
031.01	Phosphorus, Photometric (%)	9	8	0.0992	0.0225	0.0025	0.0044	0.0051	2.35%	4.12%	4.74%	1.151
031.41	Phosphorus, ICP, Dry ash (%)	9	8	0.1082	0.0067	0.0069	0.0017	0.0071	6.34%	1.53%	6.52%	4.277
031.43	Phosphorus, ICP, Microwave (%)	12	12	0.1118	0.0052	0.0049	0.0023	0.0055	4.42%	2.09%	4.88%	2.341
032.41	Potassium, ICP, Dry ash (%)	9	9	1.262	0.0538	0.0448	0.0421	0.0615	3.55%	3.34%	4.87%	1.460
032.43	Potassium, ICP, Microwave (%)	12	12	1.272	0.0859	0.0822	0.0352	0.0894	6.46%	2.76%	7.03%	2.542
035.41	Sodium, ICP, Dry ash (%)	16	15	0.0343	0.0082	0.0062	0.0033	0.0070	17.42%	9.32%	19.75%	2.121
035.43	Sodium, ICP, Microwave (%)	11	11	0.0290	0.0029	0.0027	0.0014	0.0030	9.31%	4.82%	10.49%	2.177
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	9	8	62.61	6.595	3.714	1.814	4.133	6.11%	2.98%	6.80%	2.279
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	10	10	63.47	4.919	4.726	1.930	5.105	7.45%	3.04%	8.04%	2.645

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