AAFCO
Association of American Feed Control Officials

Pet Food Ingredient Scheme

 # Labs Reporting: 99

Oats

Method Summary Report

 # Methods Reported: 202

Test Material Code # 202441

(Precision Report Follows)

Issue Date : 03/31/2024

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
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	65	**64**	9.054	0.2060	**9.046**	0.1638	0.0256	1.81%	0.0845	2.87%
001.99	Loss on Drying, Miscellaneous (%)	4	4	8.480	0.7563	8.480	0.7563	0.3782	8.92%	0.1000	2.90%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	3	3	8.872	0.1419	8.872	0.1419	0.0819	1.60%	0.0775	2.88%
001.03	Loss on Drying, Low temp. methods (%)	2	2	8.910	0.0495						
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	88	**86**	12.96	0.2141	**12.95**	0.1696	0.0229	1.31%	0.1375	2.72%
002.01	Protein, Crude, Auto Kjel-Foss (%)	4	4	13.12	0.1804	13.12	0.1804	0.0902	1.38%	0.1115	2.72%
002.05	Protein, Crude, Copper, Boric Acid (%)	2	2	12.72	0.1167						
002.11	Protein, Crude, NIR (%)	2	2	11.80	1.428						
002.00	Protein, Crude, Crude (%)	1	1	14.19							
002.04	Protein, Crude, Copper Catalyst (%)	1	1	12.49							
002.08	Protein, Crude, Cu/Ti (%)	1	1	13.21							
002.99	Protein, Crude, Miscellaneous (%)	1	1	13.30							
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	17	**17**	4.732	0.5241	**4.741**	0.1947	0.0590	4.11%	0.1413	3.16%
003.14	Fat, Crude, Ankom (%)	15	**15**	4.309	0.8407	**4.319**	0.9329	0.3011	21.60%	0.1893	3.21%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	15	**14**	4.801	0.4405	**4.703**	0.1933	0.0646	4.11%	0.1017	3.17%
003.10	Fat, Crude, Randall, Pet Ether (%)	5	5	4.844	0.1984	4.844	0.1984	0.0887	4.10%	0.0605	3.15%
003.11	Fat, Crude, NIR (%)	2	2	5.070	2.001						
003.13	Fat, Crude, Randall, Hexane Ext. (%)	2	2	4.947	0.0471						
003.99	Fat, Crude, Miscellaneous (%)	2	2	3.388	1.580						
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	4.110							
003.12	Fat, Crude, Hexane Ext (%)	1	1	4.940							
004.07	Fiber, Crude, ANKOM (%)	23	**22**	8.327	1.135	**8.242**	1.088	0.2900	13.20%	0.3772	2.91%
004.00	Fiber, Crude, Asbestos Free (%)	5	4	8.079	0.0153	8.079	0.0153	0.0076	0.19%	0.1274	2.92%
004.06	Fiber, Crude, Fibertec (%)	2	2	8.608	0.8655						
004.11	Fiber, Crude, NIR (%)	2	2	7.074	0.6735						
004.03	Fiber, Crude, Fritted Glass (%)	1	1	8.015							
005.00	Ash, 2h @ 600°C (%)	56	**55**	2.205	0.0689	**2.204**	0.0506	0.0085	2.30%	0.0391	3.55%
005.05	Ash, 3h @ 550°C (%)	21	**20**	2.221	0.0387	**2.220**	0.0412	0.0115	1.86%	0.0322	3.55%
005.03	Ash, Microwave furnace (%)	8	**8**	2.248	0.0245	**2.245**	0.0198	0.0087	0.88%	0.0483	3.54%

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005.11	Ash, NIR (%)	2	2	3.911	1.519						
005.99	Ash, Miscellaneous (%)	2	2	2.195	0.1344						
006.00	Total Sugars, As sucrose (%)	1	1	1.645							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	11	**11**	11.17	1.560	**10.96**	1.197	0.4513	10.93%	0.4100	2.79%
008.02	Fiber, Acid Detergent, Crucible (%)	4	4	11.79	1.601	11.79	1.601	0.8003	13.57%	0.2103	2.76%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	1	1	11.14							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	8	**8**	22.67	3.005	**22.04**	1.666	0.7363	7.56%	0.4590	2.13%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	3	3	24.09	1.267	24.09	1.267	0.7314	5.26%	0.2739	2.04%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	20.48							
010.99	Moisture, Miscellaneous (%)	3	3	9.188	0.2429	9.188	0.2429	0.1402	2.64%	0.1120	2.86%
010.11	Moisture, NIR (%)	1	1	8.915							
011.01	Loss on Drying, HT, 135°C 2hr (%)	20	**19**	9.199	0.5304	**9.301**	0.2578	0.0739	2.77%	0.1129	2.86%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	1	1	9.380							
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	6	**6**	45.18	2.913	**44.76**	2.271	1.159	5.07%	0.9220	1.49%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	2	2	43.93	1.237						
012.11	Starch, NIR (%)	2	2	48.70	3.118						
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	1	1	45.72							
013.02	Fat, Pretreat, Mojonnier, Bak Ext, Acid hydrolysis (%)	14	**14**	5.854	0.7557	**5.880**	0.8005	0.2674	13.62%	0.2443	3.06%
013.00	Fat, Pretreat, Acid hydrolysis (%)	9	**9**	5.648	0.2609	**5.680**	0.2077	0.0865	3.66%	0.1480	3.08%
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	3	3	5.278	0.3344	5.278	0.3344	0.1931	6.33%	0.0967	3.11%
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	3	3	5.451	0.2918	5.451	0.2918	0.1685	5.35%	0.1115	3.10%
015.43	Aluminum, ICP, Microwave (ppm)	3	2	5.605	1.846	5.605	1.846			0.4860	12.34%
015.41	Aluminum, ICP, Dry ash (ppm)	1	1	3.854							
015.53	Aluminum, ICP-MS, Microwave (ppm)	1	1	4.422							
017.43	Boron, ICP, Microwave (ppm)	2	2	1.116	0.1641						
017.41	Boron, ICP, Dry ash (ppm)	1	1	1.048							
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	0.6597							
019.43	Calcium, ICP, Microwave (%)	19	**19**	0.0582	0.0077	**0.0571**	0.0051	0.0015	8.95%	0.0017	6.15%
019.44	Calcium, ICP, Dry ash (%)	16	**15**	0.0582	0.0100	**0.0579**	0.0097	0.0031	16.77%	0.0002	6.14%
019.41	Calcium, ICP, Dry ash (%)	9	**9**	0.0794	0.0433	**0.0691**	0.0186	0.0077	26.91%	0.0013	5.98%
019.42	Calcium, ICP, Open vessel (%)	3	3	0.0559	0.0080	0.0559	0.0080	0.0046	14.35%	0.0058	6.17%
019.31	Calcium, AAS, Dry ash (%)	2	2	0.0578	0.0031						
019.53	Calcium, ICP-MS, Microwave (%)	2	2	0.0594	0.0009						
019.00	Calcium, Ox-Mn04 Vol. (%)	1	1	0.3850							
019.99	Calcium, Miscellaneous (%)	1	1	0.0200							
021.43	Cobalt, ICP, Microwave (ppm)	2	2	0.2003	0.0641						
021.41	Cobalt, ICP, Dry ash (ppm)	1	1	0.2028							
021.53	Cobalt, ICP-MS, Microwave (ppm)	2	1	0.2209							
022.43	Copper, ICP, Microwave (ppm)	22	**20**	3.861	0.3191	**3.858**	0.3254	0.0910	8.44%	0.1715	13.06%
022.44	Copper, ICP, Dry ash (ppm)	13	**13**	4.078	0.4104	**4.035**	0.3701	0.1283	9.17%	0.1046	12.97%

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022.41	Copper, ICP, Dry ash (ppm)	10	**10**	5.152	2.235	**4.608**	0.8312	0.3286	18.04%	0.0982	12.71%
022.42	Copper, ICP, Open vessel (ppm)	3	2	3.637	0.2638	3.637	0.2638			0.1980	13.17%
022.53	Copper, ICP-MS, Microwave (ppm)	1	1	3.911							
022.31	Copper, AAS, Dry ash (ppm)	1		9.600							
025.43	Iron, ICP, Microwave (ppm)	13	**13**	67.38	7.050	**66.96**	6.972	2.417	10.41%	3.626	8.50%
025.41	Iron, ICP, Dry ash (ppm)	4	4	64.81	0.9314	64.81	0.9314	0.4657	1.44%	0.5780	8.54%
025.42	Iron, ICP, Open vessel (ppm)	3	3	63.74	6.934	63.74	6.934	4.003	10.88%	1.350	8.56%
025.31	Iron, AAS, Dry ash (ppm)	1	1	69.70							
025.53	Iron, ICP-MS, Microwave (ppm)	1	1	67.21							
027.43	Magnesium, ICP, Microwave (%)	19	**18**	0.1203	0.0057	**0.1204**	0.0058	0.0017	4.83%	0.0033	5.50%
027.44	Magnesium, ICP, Dry ash (%)	16	**16**	0.1107	0.0075	**0.1108**	0.0083	0.0026	7.52%	0.0014	5.57%
027.41	Magnesium, ICP, Dry ash (%)	9	**9**	0.1123	0.0102	**0.1123**	0.0116	0.0048	10.34%	0.0015	5.56%
027.42	Magnesium, ICP, Open vessel (%)	3	3	0.1163	0.0085	0.1163	0.0085	0.0049	7.32%	0.0063	5.53%
027.31	Magnesium, AAS, Dry ash (%)	2	2	0.1163	0.0052						
027.53	Magnesium, ICP-MS, Microwave (%)	2	2	0.1242	0.0059						
028.43	Manganese, ICP, Microwave (ppm)	20	**20**	39.58	1.470	**39.52**	1.539	0.4301	3.89%	1.062	9.20%
028.44	Manganese, ICP, Dry ash (ppm)	17	**16**	38.27	1.030	**38.31**	1.059	0.3309	2.76%	0.2186	9.24%
028.41	Manganese, ICP, Dry ash (ppm)	7	**7**	37.78	1.205	**37.78**	1.366	0.6455	3.62%	0.4194	9.26%
028.42	Manganese, ICP, Open vessel (ppm)	3	3	34.93	2.479	34.93	2.479	1.431	7.10%	1.855	9.37%
028.31	Manganese, AAS, Dry ash (ppm)	2	2	38.48	1.379						
028.53	Manganese, ICP-MS, Microwave (ppm)	2	2	39.80	1.699						
031.43	Phosphorus, ICP, Microwave (%)	20	**20**	0.3073	0.0129	**0.3078**	0.0126	0.0035	4.08%	0.0083	4.78%
031.44	Phosphorus, ICP, Dry ash (%)	18	**17**	0.3040	0.0100	**0.3038**	0.0065	0.0020	2.13%	0.0064	4.79%
031.41	Phosphorus, ICP, Dry ash (%)	8	**8**	0.3021	0.0101	**0.3018**	0.0108	0.0048	3.57%	0.0069	4.79%
031.99	Phosphorus, Miscellaneous (%)	4	4	0.2894	0.0233	0.2894	0.0233	0.0117	8.06%	0.0058	4.82%
031.42	Phosphorus, ICP, Open vessel (%)	3	3	0.2806	0.0058	0.2806	0.0058	0.0033	2.07%	0.0097	4.84%
031.01	Phosphorus, Photometric (%)	2	2	0.3200	0.0071						
031.53	Phosphorus, ICP-MS, Microwave (%)	2	2	0.3197	0.0075						
031.03	Phosphorus, Autoanalyzer (%)	1	1	0.3025							
032.43	Potassium, ICP, Microwave (%)	20	**20**	0.3857	0.0199	**0.3883**	0.0159	0.0045	4.10%	0.0103	4.61%
032.44	Potassium, ICP, Dry ash (%)	17	**16**	0.3613	0.0178	**0.3610**	0.0196	0.0061	5.43%	0.0100	4.66%
032.41	Potassium, ICP, Dry ash (%)	9	**9**	0.3829	0.0139	**0.3829**	0.0157	0.0066	4.11%	0.0101	4.62%
032.42	Potassium, ICP, Open vessel (%)	3	3	0.3611	0.0273	0.3611	0.0273	0.0158	7.56%	0.0134	4.66%
032.31	Potassium, AAS, Dry ash (%)	2	2	0.3988	0.0159						
032.53	Potassium, ICP-MS, Microwave (%)	2	2	0.3921	0.0100						
032.99	Potassium, Miscellaneous (%)	1	1	0.3820							
033.01	Salt as chloride, Poten Cl (%)	3	3	0.0972	0.0422	0.0972	0.0422	0.0299	43.47%		5.68%
033.00	Salt as chloride, Sol Cl (%)	2	1	0.0837							
034.04	Selenium, Total (Se), AA, Hydride (ppm)	1	1	0.1150							
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	2	1	0.1806							

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034.43	Selenium, Total (Se), ICP, Microwave (ppm)	1		0.0000							
035.41	Sodium, ICP, Dry ash (%)	25	**20**	0.0131	0.0054	**0.0100**	0.0000	0.0000	0.00%	0.0004	8.00%
035.43	Sodium, ICP, Microwave (%)	8	**6**	0.0075	0.0021	**0.0075**	0.0023	0.0012	31.17%	0.0009	8.35%
035.42	Sodium, ICP, Open vessel (%)	3	2	0.0075	0.0036	0.0075	0.0036				8.36%
035.53	Sodium, ICP-MS, Microwave (%)	1	1	0.0073							
036.43	Sulfur, ICP, Microwave (%)	10	**10**	0.2021	0.0651	**0.1841**	0.0143	0.0056	7.76%	0.0056	5.16%
036.42	Sulfur, ICP, Open vessel (%)	4	4	0.1693	0.0062	0.1693	0.0062	0.0031	3.69%	0.0069	5.23%
036.04	Sulfur, LECO (%)	1	1	0.1800							
037.43	Zinc, ICP, Microwave (ppm)	19	**18**	29.36	2.373	**29.33**	2.636	0.7766	8.99%	0.6979	9.62%
037.41	Zinc, ICP, Dry ash (ppm)	13	**13**	24.51	9.288	**24.51**	10.53	3.652	42.98%	0.4823	9.88%
037.44	Zinc, ICP, Dry ash (ppm)	10	**9**	24.27	10.26	**24.27**	11.63	4.847	47.93%	0.4823	9.90%
037.42	Zinc, ICP, Open vessel (ppm)	3	3	27.30	1.819	27.30	1.819	1.050	6.66%	0.9600	9.72%
037.31	Zinc, AAS, Dry ash (ppm)	2	2	28.74	4.540						
037.53	Zinc, ICP-MS, Microwave (ppm)	2	2	29.17	0.4656						
037.34	Zinc, AAS, Dry ash (ppm)	1	1	29.75							
038.43	Molybdenum, ICP, Microwave (ppm)	3	3	1.321	0.0177	1.321	0.0177	0.0125	1.34%	0.0669	15.34%
038.41	Molybdenum, ICP, Dry ash (ppm)	2	2	1.086	0.1788						
038.53	Molybdenum, ICP-MS, Microwave (ppm)	2	2	1.321	0.0297						
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	1.897							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	0.0293							
042.99	Chloride, Miscellaneous (%)	1	1	0.0924							
120.00	Alanine, Post-col Ninhydrin Der (%)	2	2	0.5845	0.0063						
120.05	Alanine, Pre-col AQC Der (%)	2	2	0.5120	0.0785						
120.99	Alanine, Miscellaneous (%)	2	2	0.8015	0.2100						
121.00	Arginine, Post-col Ninhydrin Der (%)	2	2	0.7830	0.0184						
121.05	Arginine, Pre-col AQC Der (%)	2	2	0.7168	0.0322						
121.99	Arginine, Miscellaneous (%)	2	2	0.7458	0.0414						
122.00	Aspartic, Post-col Ninhydrin Der (%)	2	2	0.9723	0.0109						
122.05	Aspartic, Pre-col AQC Der (%)	2	2	0.8663	0.1333						
122.99	Aspartic, Miscellaneous (%)	2	2	0.9635	0.1817						
124.00	Cysteine/Cystine, PAO Post-col Ninhydri (%)	2	2	0.3664	0.0121						
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	2	2	0.2529	0.0256						
124.99	Cysteine/Cystine, Miscellaneous (%)	2	2	0.4483	0.2026						
125.00	Glutamic, Post-col Ninhydrin Der (%)	2	2	2.663	0.0887						
125.05	Glutamic, Pre-col AQC Der (%)	2	2	2.295	0.6795						
125.99	Glutamic, Miscellaneous (%)	2	2	2.015	1.181						
126.00	Glycine, Post-col Ninhydrin Der (%)	2	2	0.6119	0.0027						
126.05	Glycine, Pre-col AQC Der (%)	2	2	0.5338	0.0697						
126.99	Glycine, Miscellaneous (%)	2	2	0.6060	0.2701						
127.00	Histidine, Post-col Ninhydrin Der (%)	2	2	0.2611	0.0196						

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127.05	Histidine, Pre-col AQC Der (%)	2	2	0.2560	0.0177						
127.99	Histidine, Miscellaneous (%)	2	2	0.3405	0.1054						
128.00	Isoleucine, Post-col Ninhydrin Der (%)	2	2	0.4639	0.0440						
128.05	Isoleucine, Pre-col AQC Der (%)	2	2	0.4115	0.0714						
128.99	Isoleucine, Miscellaneous (%)	2	2	0.5700	0.1414						
129.00	Leucine, Post-col Ninhydrin Der (%)	2	2	0.9232	0.0046						
129.05	Leucine, Pre-col AQC Der (%)	2	2	0.7950	0.1831						
129.99	Leucine, Miscellaneous (%)	2	2	0.9888	0.1573						
130.00	L-Lysine, Post-col Ninhydrin Der (%)	2	2	0.5014	0.0476						
130.05	L-Lysine, Pre-col AQC Der (%)	2	2	0.4523	0.0421						
130.99	L-Lysine, Miscellaneous (%)	2	2	0.5898	0.1418						
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	2	2	0.2195	0.0078						
131.05	Methionine, PAO Pre-col AQC Der (%)	2	2	0.2011	0.0253						
131.99	Methionine, Miscellaneous (%)	2	2	0.1008	0.1142						
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	2	2	0.6199	0.0285						
132.05	Phenylalanine, Pre-col AQC Der (%)	2	2	0.5580	0.1068						
132.99	Phenylalanine, Miscellaneous (%)	2	2	0.5675	0.1732						
133.00	Proline, Post-col Ninhydrin Der (%)	2	2	0.6527	0.0321						
133.05	Proline, Pre-col AQC Der (%)	2	2	0.5848	0.1100						
133.99	Proline, Miscellaneous (%)	2	2	0.7570	0.1881						
134.00	Serine, Post-col Ninhydrin Der (%)	2	2	0.5649	0.0564						
134.05	Serine, Pre-col AQC Der (%)	2	2	0.5478	0.1149						
134.99	Serine, Miscellaneous (%)	2	2	1.020	0.5374						
135.00	Threonine, Post-col Ninhydrin Der (%)	2	2	0.4052	0.0069						
135.05	Threonine, Pre-col AQC Der (%)	2	2	0.3965	0.0417						
135.99	Threonine, Miscellaneous (%)	2	2	0.5093	0.0025						
136.99	Tryptophan, Miscellaneous (%)	3	3	0.2595	0.1902	0.2595	0.1902	0.1098	73.30%	0.0145	4.90%
136.05	Tryptophan, Pre-col AQC Der (%)	2	2	0.1385	0.0085						
136.03	Tryptophan, Alka-Hydrol + IS RP LC Fl (%)	1	1	0.1754							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	2	2	0.3479	0.0323						
137.05	Tyrosine, Pre-col AQC Der (%)	2	2	0.3280	0.0226						
137.99	Tyrosine, Miscellaneous (%)	2	2	0.3570	0.1669						
138.00	Valine, Post-col Ninhydrin Der (%)	2	2	0.6332	0.0450						
138.05	Valine, Pre-col AQC Der (%)	2	2	0.5518	0.1107						
138.99	Valine, Miscellaneous (%)	2	2	0.5540	0.0686						
139.00	Taurine, Post-col Ninhydrin Der (%)	1	1	0.2100							
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0610							
400.01	Water Activity, Aqualab chilled mirror (Units)	1	1	0.3924							
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	1	1	0.0069							
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		0.8900							

Test Material Code # 202441 **(Precision Report Follows)** **Issue Date : 03/31/2024**

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
518.41	Cadmium, ICP, Dry ash (ppm)	1	1	0.0173							
518.43	Cadmium, ICP, Microwave (ppm)	2	1	0.0259							
518.53	Cadmium, ICP-MS, Microwave (ppm)	2	1	0.0177							
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	3	3	3.064	1.115	3.064	1.115	0.6439	36.40%	0.0394	13.52%
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	2	2	4.119	0.2554						
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	1	1	1.660							
526.41	Lead, ICP, Dry ash (ppm)	1	1	0.0660							
526.43	Lead, ICP, Microwave (ppm)	1	1	0.1528							
526.53	Lead, ICP-MS, Microwave (ppm)	2	1	0.0064							
529.99	Mercury, Miscellaneous (ppb)	2	1	1.569							
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	5.679	0.1825						
539.41	Nickel, ICP, Dry ash (ppm)	1	1	4.854							
539.43	Nickel, ICP, Microwave (ppm)	1	1	4.973							

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.

Association of American Feed Control Officials

ANAB ACCREDITED ISO/IEC 17043 PROFICIENCY TESTING PROVIDER

AAFCO PTP Pet Food Ingredient Scheme

Pet Food Ingredient Scheme

Oats

Test Material Code # 202441

Method Precision Report

 # Methods Reported: 41

 # Labs Reporting: 99

Issue Date : 03/31/2024

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 (%)	65	61	9.054	0.2060	0.1668	0.0787	0.1845	1.85%	0.87%	2.04%	2.343
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	88	80	12.96	0.2141	0.1599	0.1083	0.1931	1.23%	0.84%	1.49%	1.783
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	15	13	4.801	0.4405	0.1703	0.1056	0.2004	3.63%	2.25%	4.27%	1.897
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	17	15	4.732	0.5241	0.1157	0.1505	0.1898	2.44%	3.18%	4.01%	1.261
003.10	Fat, Crude, Randall, Pet Ether (%)	5	5	4.844	0.1984	0.1954	0.0479	0.2012	4.03%	0.99%	4.15%	4.203
003.14	Fat, Crude, Ankom (%)	15	14	4.309	0.8407	0.7463	0.1593	0.7631	16.89%	3.61%	17.27%	4.790
004.07	Fiber, Crude, ANKOM (%)	23	21	8.327	1.135	1.092	0.4118	1.167	13.02%	4.91%	13.91%	2.833
005.00	Ash, 2h @ 600°C (%)	56	50	2.205	0.0689	0.0384	0.0346	0.0517	1.74%	1.57%	2.35%	1.496
005.03	Ash, Microwave furnace (%)	8	7	2.248	0.0245		0.0371			1.66%		
005.05	Ash, 3h @ 550°C (%)	21	19	2.221	0.0387	0.0284	0.0271	0.0392	1.28%	1.22%	1.77%	1.449
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	11	9	11.17	1.560	0.8625	0.2914	0.9104	8.09%	2.73%	8.54%	3.124
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	8	6	22.67	3.005	1.173	0.3229	1.216	5.45%	1.50%	5.65%	3.767
011.01	Loss on Drying, HT, 135°C 2hr (%)	20	18	9.199	0.5304	0.2408	0.1023	0.2616	2.59%	1.10%	2.81%	2.558
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	6	5	45.18	2.913	1.044	0.9394	1.405	2.37%	2.13%	3.19%	1.495
013.00	Fat, Pretreat, Acid hydrolysis (%)	9	8	5.648	0.2609	0.1176	0.1433	0.1853	2.06%	2.50%	3.24%	1.294
013.02	Fat, Pretreat, Mojonnier, Bak Ext, Acid hydrolysis (%)	14	13	5.854	0.7557	0.6425	0.1868	0.6691	10.77%	3.13%	11.22%	3.581
019.41	Calcium, ICP, Dry ash (%)	9	7	0.0794	0.0433	0.0139	0.0004	0.0139	20.77%	0.56%	20.78%	36.85
019.43	Calcium, ICP, Microwave (%)	19	17	0.0582	0.0077	0.0043	0.0011	0.0044	7.56%	1.97%	7.81%	3.967
019.44	Calcium, ICP, Dry ash (%)	16	13	0.0582	0.0100	0.0104	0.0000	0.0104	17.52%	0.00%	17.52%	
022.41	Copper, ICP, Dry ash (ppm)	10	9	5.152	2.235	0.6213	0.0713	0.6254	13.90%	1.59%	13.99%	8.775
022.43	Copper, ICP, Microwave (ppm)	22	19	3.861	0.3191	0.2548	0.2126	0.3319	6.65%	5.55%	8.66%	1.561
022.44	Copper, ICP, Dry ash (ppm)	13	13	4.078	0.4104	0.4034	0.1068	0.4173	9.89%	2.62%	10.23%	3.909
025.43	Iron, ICP, Microwave (ppm)	13	13	67.38	7.050	6.620	3.430	7.455	9.82%	5.09%	11.06%	2.174
027.41	Magnesium, ICP, Dry ash (%)	9	8	0.1123	0.0102	0.0101	0.0007	0.0102	8.91%	0.66%	8.94%	13.57
027.43	Magnesium, ICP, Microwave (%)	19	18	0.1203	0.0057	0.0055	0.0018	0.0058	4.60%	1.47%	4.83%	3.285
027.44	Magnesium, ICP, Dry ash (%)	16	16	0.1107	0.0075	0.0075	0.0009	0.0075	6.74%	0.80%	6.79%	8.497
028.41	Manganese, ICP, Dry ash (ppm)	7	7	37.78	1.205	1.172	0.3963	1.237	3.10%	1.05%	3.27%	3.121
028.43	Manganese, ICP, Microwave (ppm)	20	20	39.58	1.470	1.306	0.9540	1.617	3.30%	2.41%	4.09%	1.695
028.44	Manganese, ICP, Dry ash (ppm)	17	15	38.27	1.030	1.055	0.1905	1.072	2.76%	0.50%	2.80%	5.629
031.41	Phosphorus, ICP, Dry ash (%)	8	8	0.3021	0.0101	0.0097	0.0039	0.0104	3.20%	1.30%	3.46%	2.662
031.43	Phosphorus, ICP, Microwave (%)	20	20	0.3073	0.0129	0.0118	0.0071	0.0138	3.86%	2.31%	4.49%	1.945
031.44	Phosphorus, ICP, Dry ash (%)	18	15	0.3040	0.0100	0.0043	0.0032	0.0054	1.42%	1.05%	1.77%	1.687
032.41	Potassium, ICP, Dry ash (%)	9	9	0.3829	0.0139	0.0132	0.0062	0.0146	3.44%	1.63%	3.80%	2.337
032.43	Potassium, ICP, Microwave (%)	20	18	0.3857	0.0199	0.0145	0.0068	0.0160	3.75%	1.76%	4.14%	2.355
032.44	Potassium, ICP, Dry ash (%)	17	15	0.3613	0.0178	0.0176	0.0029	0.0178	4.89%	0.81%	4.95%	6.116
035.41	Sodium, ICP, Dry ash (%)	25	19	0.0131	0.0054	0.0055	0.0001	0.0055	41.73%	0.64%	41.74%	65.53

Test Material Code # 202441 **Issue Date : 03/31/2024**

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035.43	Sodium, ICP, Microwave (%)	8	5	0.0075	0.0021	0.0023	0.0003	0.0023	30.79%	4.03%	31.05%	7.713
036.43	Sulfur, ICP, Microwave (%)	10	9	0.2021	0.0651	0.0103	0.0044	0.0111	5.65%	2.40%	6.13%	2.556
037.41	Zinc, ICP, Dry ash (ppm)	13	13	24.51	9.288	9.284	0.4099	9.293	37.88%	1.67%	37.92%	22.67
037.43	Zinc, ICP, Microwave (ppm)	19	17	29.36	2.373	2.327	0.5471	2.390	7.97%	1.87%	8.18%	4.370
037.44	Zinc, ICP, Dry ash (ppm)	10	9	24.27	10.26	10.25	0.3999	10.26	42.25%	1.65%	42.28%	25.66

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