

Animal Feed Scheme
Equine Crumbles
Test Material Code # 201890

Method Summary Report
(Precision Report Follows)

Methods Reported: 379
Labs Reporting: 192
Issue Date : 11/30/2018

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO PT ffp - Robust sd	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Horwitz %RSD
000.02	Urea, As protein, Colorimetric (%)	1	1	0.1000							
001.00	Loss on Drying, Vac 95°C 5 hr (%)	5	5	7.262	0.3149	7.262	0.3149	0.1760	4.34%	0.0306	2.97%
001.03	Loss on Drying, Low temp. methods (%)	5	3	7.255	0.1363	7.255	0.1363	0.0984	1.88%	0.0080	2.97%
001.05	Loss on Drying, LECO (%)	2	2	7.113	0.0813						
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	45	42	7.293	0.2416	7.294	0.2510	0.0484	3.44%	0.1029	2.97%
001.99	Loss on Drying, Miscellaneous (%)	24	23	7.081	0.6009	7.153	0.4785	0.1247	6.69%	0.2601	2.97%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	19	18	13.99	0.2478	14.00	0.2658	0.0783	1.90%	0.0765	2.67%
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	4	4	13.87	0.1349	13.87	0.1349	0.0843	0.97%	0.1296	2.69%
002.03	Protein, Crude, Hach Method (%)	1	1	12.60							
002.04	Protein, Crude, Copper Catalyst (%)	5	5	13.16	3.350	13.16	3.350	1.873	25.45%	0.0800	2.71%
002.05	Protein, Crude, Copper, Boric Acid (%)	31	28	14.05	0.3105	14.01	0.2214	0.0523	1.58%	0.0695	2.67%
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	119	117	14.30	0.3070	14.28	0.2495	0.0288	1.75%	0.1150	2.65%
002.08	Protein, Crude, Cu/Ti (%)	1	1	13.88							
002.10	Protein, Crude, Block dig/distillation (%)	1	1	14.11							
002.11	Protein, Crude, NIR (%)	4	4	14.81	3.448	14.81	3.448	2.155	23.29%	0.3400	2.60%
002.99	Protein, Crude, Miscellaneous (%)	1	1	0.1432							
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	10	9	2.024	0.4410	2.024	0.5001	0.2084	24.71%	0.0432	3.60%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	1.705							
003.06	Fat, Crude, Pet Ether (%)	11	10	1.879	0.2127	1.911	0.1543	0.0610	8.07%	0.0716	3.63%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	13	1.954	0.2382	1.924	0.2013	0.0698	10.46%	0.0814	3.62%
003.10	Fat, Crude, Randall, Pet Ether (%)	30	29	1.697	0.4144	1.643	0.2321	0.0539	14.13%	0.1038	3.71%
003.11	Fat, Crude, NIR (%)	4	4	1.676	0.5112	1.676	0.5112	0.3195	30.50%	0.0725	3.70%
003.12	Fat, Crude, Hexane Ext (%)	2	2	1.525	0.2334						
003.13	Fat, Crude, Randall, Hexane Ext. (%)	8	8	1.840	0.1878	1.840	0.2129	0.0941	11.57%	0.0892	3.65%
003.14	Fat, Crude, Ankom (%)	37	36	1.796	0.3208	1.783	0.2662	0.0555	14.93%	0.1105	3.67%
003.99	Fat, Crude, Miscellaneous (%)	2	2	1.355	0.6435						
004.00	Fiber, Crude, Asbestos Free (%)	15	15	11.83	1.161	11.67	0.9445	0.3048	8.09%	0.2500	2.76%
004.03	Fiber, Crude, Fritted Glass (%)	8	8	12.17	2.713	12.01	2.693	1.190	22.43%	0.3413	2.75%
004.06	Fiber, Crude, Fibertec (%)	25	24	11.73	0.7446	11.75	0.6569	0.1676	5.59%	0.1955	2.76%
004.07	Fiber, Crude, ANKOM (%)	62	61	11.31	2.333	11.38	1.971	0.3155	17.32%	0.4201	2.77%
004.11	Fiber, Crude, NIR (%)	4	3	13.78	0.1163	13.78	0.1163	0.0839	0.84%	0.3400	2.70%
004.99	Fiber, Crude, Miscellaneous (%)	3	3	9.832	0.8898	9.832	0.8898	0.6422	9.05%	0.1767	2.84%

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005.00	Ash, 2h @ 600°C (%)	89	87	20.78	0.2444	20.77	0.2295	0.0308	1.10%	0.1310	2.19%
005.02	Ash, LECO (%)	1	1	21.40							
005.03	Ash, Microwave furnace (%)	1	1	20.70							
005.05	Ash, 3h @ 550°C (%)	36	34	20.96	0.2513	20.95	0.2622	0.0562	1.25%	0.0917	2.18%
005.11	Ash, NIR (%)	3	3	15.02	13.70	15.02	13.70	12.11	91.23%	0.2767	2.58%
005.99	Ash, Miscellaneous (%)	10	10	20.99	0.3771	20.99	0.4083	0.1614	1.94%	0.1184	2.18%
006.00	Total Sugars, As sucrose (%)	2	2	4.392	0.7167						
006.01	Total Sugars, Mod. Fehling Soln (%)	1	1	7.130							
006.99	Total Sugars, Miscellaneous (%)	3	2	4.025	0.8132	4.025	0.8132			0.2500	3.24%
008.02	Fiber, Acid Detergent, Crucible (%)	16	15	14.94	1.384	15.10	1.162	0.3751	7.69%	0.2487	2.57%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	16.45							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	39	38	13.81	2.113	13.56	1.874	0.3801	13.82%	0.4262	2.70%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	4	4	16.18	1.499	16.18	1.499	0.9368	9.26%	0.1350	2.49%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	2	2	26.20	2.613						
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	14	14	26.36	1.271	26.47	1.172	0.3916	4.43%	0.3906	1.94%
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	40	39	24.13	2.635	23.97	2.442	0.4888	10.19%	0.4147	2.04%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	3	3	27.33	0.2933	27.33	0.2933	0.2116	1.07%	0.5633	1.91%
010.03	Moisture, Karl-Fischer (%)	2	2	6.833	0.2298						
010.11	Moisture, NIR (%)	4	3	8.077	1.717	8.077	1.717	1.239	21.25%	0.0333	2.92%
010.99	Moisture, Miscellaneous (%)	16	16	7.400	0.8587	7.331	0.7315	0.2286	9.98%	0.2094	2.96%
011.01	Loss on Drying, 135°C 2hr (%)	68	66	8.463	0.6103	8.541	0.4648	0.0715	5.44%	0.1286	2.90%
011.02	Loss on Drying, 130°C for 2 hours (%)	5	4	8.595	0.3288	8.595	0.3288	0.2055	3.83%	0.0650	2.89%
011.99	Loss on Drying, High Temp. Methods Miscellaneous (%)	2	2	8.588	0.2652						
012.00	Starch, Polarimetric (Ewers) (%)	17	15	12.76	1.388	13.08	0.3897	0.1258	2.98%	0.1753	2.72%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	11	11	11.86	1.529	11.89	1.209	0.4558	10.17%	0.4461	2.76%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	5	4	12.42	0.9770	12.42	0.9770	0.6107	7.87%	0.3050	2.74%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	5	4	11.73	2.381	11.73	2.381	1.718	20.31%	0.0325	2.76%
012.11	Starch, NIR (%)	3	3	11.75	3.697	11.75	3.697	2.668	31.47%	0.1367	2.76%
012.99	Starch, Miscellaneous (%)	2	2	17.05	5.936						
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	16	15	3.389	1.300	3.310	1.280	0.4133	38.68%	0.1082	3.34%
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	14	14	3.309	1.135	3.451	0.7708	0.2575	22.34%	0.1439	3.32%
013.08	Fat, Base Pretreat, Roese-Gottlieb Modified (%)	1	1	2.554							
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	6	6	1.998	0.6252	2.008	0.6859	0.3500	34.15%	0.0733	3.60%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	3	3	5.722	2.151	5.722	2.151	1.552	37.58%	0.2362	3.08%
015.41	Aluminum, ICP, Dry ash (mg / kg (ppm))	3	3	610.5	50.45	610.5	50.45	36.41	8.26%	23.34	6.09%
015.42	Aluminum, ICP, Open vessel (mg / kg (ppm))	1	1	671.1							
015.43	Aluminum, ICP, Microwave (mg / kg (ppm))	7	7	555.5	112.7	557.6	123.2	58.19	22.09%	23.21	6.18%
015.52	Aluminum, ICP-MS, Open vessel (mg / kg (ppm))	1	1	597.0							
017.41	Boron, ICP, Dry ash (mg / kg (ppm))	6	6	28.29	13.03	27.52	12.95	6.609	47.06%	1.103	9.71%
017.42	Boron, ICP, Open vessel (mg / kg (ppm))	6	6	24.35	19.15	17.52	3.204	1.635	18.29%	3.323	10.40%

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017.43	Boron, ICP, Microwave (mg / kg (ppm))	4	4	30.02	10.28	30.02	10.28	6.425	34.24%	0.7075	9.59%
017.53	Boron, ICP-MS, Microwave (mg / kg (ppm))	1	1	0.6350							
019.00	Calcium, Ox-Mn04 Vol. (%)	12	10	4.091	0.1064	4.100	0.0972	0.0384	2.37%	0.0218	3.23%
019.02	Calcium, Hach Method (%)	1	1	5.166							
019.03	Calcium, Semiauto (Autoanalyzer) (%)	1	1	4.512							
019.08	Calcium, EDTA (%)	13	13	3.967	0.5747	4.140	0.1635	0.0567	3.95%	0.0718	3.23%
019.09	Calcium, Ion-selective electrode (%)	1	1	3.774							
019.31	Calcium, AAS, Dry ash (%)	21	20	4.021	0.2171	4.030	0.2274	0.0636	5.64%	0.0755	3.24%
019.32	Calcium, AAS, Open vessel (%)	2	2	3.765	0.2970						
019.33	Calcium, AAS, Microwave (%)	2	2	4.148	0.2722						
019.41	Calcium, ICP, Dry ash (%)	26	26	4.075	0.2399	4.081	0.2453	0.0601	6.01%	0.1104	3.24%
019.42	Calcium, ICP, Open vessel (%)	23	23	4.071	0.2608	4.097	0.2218	0.0578	5.41%	0.0941	3.23%
019.43	Calcium, ICP, Microwave (%)	26	25	4.139	0.3237	4.082	0.1773	0.0443	4.34%	0.0485	3.24%
019.52	Calcium, ICP-MS, Open vessel (%)	4	3	3.988	0.2933	3.988	0.2933	0.2116	7.35%	0.0967	3.25%
019.53	Calcium, ICP-MS, Microwave (%)	4	4	4.003	0.2899	4.003	0.2899	0.1812	7.24%	0.2063	3.25%
019.99	Calcium, Miscellaneous (%)	5	4	4.131	0.2265	4.131	0.2265	0.1415	5.48%	0.0325	3.23%
021.31	Cobalt, AAS, Dry ash (mg / kg (ppm))	1	1	42.00							
021.34	Cobalt, AAS, Graphite furnace (mg / kg (ppm))	1	1	45.00							
021.41	Cobalt, ICP, Dry ash (mg / kg (ppm))	5	4	45.28	4.205	45.28	4.205	2.628	9.29%	0.2450	9.01%
021.42	Cobalt, ICP, Open vessel (mg / kg (ppm))	4	4	45.92	0.6073	45.92	0.6073	0.3796	1.32%	1.333	8.99%
021.43	Cobalt, ICP, Microwave (mg / kg (ppm))	6	6	46.54	5.356	46.54	6.074	3.100	13.05%	0.5430	8.97%
021.52	Cobalt, ICP-MS, Open vessel (mg / kg (ppm))	4	3	43.93	4.492	43.93	4.492	3.241	10.22%	0.5767	9.05%
021.53	Cobalt, ICP-MS, Microwave (mg / kg (ppm))	6	6	52.48	4.374	52.48	4.961	2.531	9.45%	1.600	8.81%
022.31	Copper, AAS, Dry ash (mg / kg (ppm))	16	16	862.9	48.12	862.4	46.60	14.56	5.40%	8.538	5.78%
022.32	Copper, AAS, Open vessel (mg / kg (ppm))	1	1	801.7							
022.33	Copper, AAS, Microwave (mg / kg (ppm))	2	2	878.4	16.90						
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	24	24	842.2	80.35	847.7	75.08	19.16	8.86%	20.31	5.80%
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	21	20	893.1	95.17	878.7	48.30	13.50	5.50%	12.33	5.77%
022.43	Copper, ICP, Microwave (mg / kg (ppm))	23	22	890.4	114.9	870.8	45.39	12.10	5.21%	17.49	5.78%
022.51	Copper, ICP-MS, Dry ash (mg / kg (ppm))	1	1	879.5							
022.52	Copper, ICP-MS, Open vessel (mg / kg (ppm))	3	3	962.9	79.95	962.9	79.95	57.70	8.30%	29.57	5.69%
022.53	Copper, ICP-MS, Microwave (mg / kg (ppm))	4	4	812.2	64.01	812.2	64.01	40.01	7.88%	32.30	5.84%
022.99	Copper, Miscellaneous (mg / kg (ppm))	4	4	929.8	92.30	929.8	92.30	57.69	9.93%	4.500	5.72%
023.01	Fluorine, Ion Sel Elect (mg / kg (ppm))	1	1	159.5							
024.03	Iodine, Ion-selective electrode (mg / kg (ppm))	1	1	7.950							
024.52	Iodine, ICP-MS, Open vessel (mg / kg (ppm))	1	1	42.00							
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	16	16	10,514	2,682	11,003	684.2	213.8	6.22%	217.4	3.94%
025.32	Iron, AAS, Open vessel (mg / kg (ppm))	1	1	11,927							
025.33	Iron, AAS, Microwave (mg / kg (ppm))	1	1	8,721							
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	24	24	9,537	3,602	10,177	2,425	618.7	23.82%	209.2	3.99%

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025.42	Iron, ICP, Open vessel (mg / kg (ppm))	17	17	9,580	2,549	10,065	1,395	423.1	13.86%	413.2	4.00%
025.43	Iron, ICP, Microwave (mg / kg (ppm))	21	20	9,544	3,967	10,297	2,348	656.2	22.80%	277.9	3.98%
025.51	Iron, ICP-MS, Dry ash (mg / kg (ppm))	1	1	10,416							
025.52	Iron, ICP-MS, Open vessel (mg / kg (ppm))	2	2	9,746	355.3						
025.53	Iron, ICP-MS, Microwave (mg / kg (ppm))	3	3	10,696	969.7	10,696	969.7	699.8	9.07%	565.0	3.96%
025.99	Iron, Miscellaneous (mg / kg (ppm))	2	2	12,295	48.79						
027.31	Magnesium, AAS, Dry ash (%)	14	14	0.4800	0.0406	0.4806	0.0448	0.0150	9.32%	0.0090	4.47%
027.32	Magnesium, AAS, Open vessel (%)	2	2	0.4660	0.0481						
027.33	Magnesium, AAS, Microwave (%)	3	3	0.4937	0.0180	0.4937	0.0180	0.0130	3.65%	0.0073	4.45%
027.41	Magnesium, ICP, Dry ash (%)	24	23	0.4827	0.0346	0.4835	0.0345	0.0090	7.15%	0.0132	4.46%
027.42	Magnesium, ICP, Open vessel (%)	22	22	0.4935	0.0336	0.4925	0.0288	0.0077	5.86%	0.0103	4.45%
027.43	Magnesium, ICP, Microwave (%)	23	22	0.4686	0.0624	0.4724	0.0422	0.0112	8.93%	0.0085	4.48%
027.51	Magnesium, ICP-MS, Dry ash (%)	1	1	0.5088							
027.52	Magnesium, ICP-MS, Open vessel (%)	4	4	0.5036	0.0383	0.5036	0.0383	0.0239	7.60%	0.0187	4.43%
027.53	Magnesium, ICP-MS, Microwave (%)	4	3	0.4873	0.0270	0.4873	0.0270	0.0195	5.54%	0.0353	4.46%
027.99	Magnesium, Miscellaneous (%)	3	3	0.4950	0.0278	0.4950	0.0278	0.0246	5.62%	0.0100	4.45%
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	16	16	265.9	38.88	272.3	22.58	7.056	8.29%	3.229	6.88%
028.32	Manganese, AAS, Open vessel (mg / kg (ppm))	1	1	286.7							
028.33	Manganese, AAS, Microwave (mg / kg (ppm))	1	1	286.1							
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	24	23	261.7	39.86	267.6	28.41	7.404	10.61%	6.692	6.90%
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	21	20	281.4	21.12	280.2	20.14	5.628	7.19%	7.275	6.85%
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	21	20	281.9	18.71	280.5	17.61	4.921	6.28%	3.796	6.85%
028.52	Manganese, ICP-MS, Open vessel (mg / kg (ppm))	3	3	289.1	23.52	289.1	23.52	16.97	8.14%	8.533	6.82%
028.53	Manganese, ICP-MS, Microwave (mg / kg (ppm))	5	5	254.2	30.62	254.2	30.62	17.12	12.04%	17.77	6.95%
028.99	Manganese, Miscellaneous (mg / kg (ppm))	4	4	287.3	26.95	287.3	26.95	16.84	9.38%	8.000	6.82%
031.00	Phosphorus, Vol (%)	1	1	2.730							
031.01	Phosphorus, Photometric (%)	47	46	2.598	0.2528	2.620	0.1253	0.0231	4.78%	0.0450	3.46%
031.02	Phosphorus, GQMP (AOAC 935.13-Extraction) (%)	2	2	2.703	0.0318						
031.03	Phosphorus, Autoanalyzer (%)	4	4	2.641	0.1427	2.641	0.1427	0.0892	5.41%	0.0275	3.46%
031.06	Phosphorus, Hach Method (%)	1	1	2.355							
031.41	Phosphorus, ICP, Dry ash (%)	25	24	2.562	0.2288	2.553	0.2376	0.0606	9.31%	0.0454	3.47%
031.42	Phosphorus, ICP, Open vessel (%)	22	21	2.493	0.2072	2.494	0.2052	0.0560	8.22%	0.0678	3.49%
031.43	Phosphorus, ICP, Microwave (%)	23	23	2.606	0.1739	2.609	0.1916	0.0499	7.35%	0.0496	3.46%
031.51	Phosphorus, ICP-MS, Dry ash (%)	1	1	2.711							
031.52	Phosphorus, ICP-MS, Open vessel (%)	2	2	2.465	0.1907						
031.53	Phosphorus, ICP-MS, Microwave (%)	4	4	2.685	0.1517	2.685	0.1517	0.0948	5.65%	0.0807	3.45%
031.99	Phosphorus, Miscellaneous (%)	5	4	2.284	0.5565	2.284	0.5565	0.4016	24.37%	0.0525	3.53%
032.02	Potassium, Flame Emission (%)	1	1	1.440							
032.08	Potassium, Ion-selective electrode (%)	1	1	1.216							
032.31	Potassium, AAS, Dry ash (%)	14	13	1.436	0.0460	1.436	0.0514	0.0178	3.58%	0.0169	3.79%

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032.32	Potassium, AAS, Open vessel (%)	3	3	1.283	0.0710	1.283	0.0710	0.0512	5.53%	0.0467	3.85%
032.33	Potassium, AAS, Microwave (%)	1	1	1.505							
032.41	Potassium, ICP, Dry ash (%)	24	23	1.427	0.0700	1.432	0.0678	0.0177	4.74%	0.0435	3.79%
032.42	Potassium, ICP, Open vessel (%)	22	21	1.463	0.0721	1.464	0.0792	0.0216	5.41%	0.0470	3.78%
032.43	Potassium, ICP, Microwave (%)	24	23	1.453	0.0879	1.454	0.0938	0.0244	6.45%	0.0279	3.78%
032.52	Potassium, ICP-MS, Open vessel (%)	3	3	1.464	0.1478	1.464	0.1478	0.1067	10.10%	0.0753	3.78%
032.53	Potassium, ICP-MS, Microwave (%)	4	4	1.474	0.0915	1.474	0.0915	0.0572	6.21%	0.1101	3.77%
032.99	Potassium, Miscellaneous (%)	5	5	1.420	0.0384	1.420	0.0384	0.0214	2.70%	0.0518	3.79%
033.00	Salt as chloride, Sol Cl (%)	23	22	1.650	0.4836	1.757	0.2846	0.0759	16.20%	0.0272	3.67%
033.01	Salt as chloride, Poten Cl (%)	30	29	1.994	0.0366	1.997	0.0256	0.0059	1.28%	0.0230	3.60%
033.03	Salt as chloride, Quantab (%)	6	6	1.807	0.1311	1.807	0.1487	0.0759	8.23%	0.0167	3.66%
033.05	Salt as chloride, Ion Sel Electrode (%)	3	3	1.850	0.1381	1.850	0.1381	0.0997	7.47%	0.0200	3.65%
033.99	Salt, Miscellaneous (%)	9	9	1.672	0.4047	1.672	0.4589	0.1912	27.44%	0.0781	3.70%
034.04	Selenium, AA, Hydride (mg / kg (ppm))	3	3	14.04	3.220	14.04	3.220	2.324	22.94%	0.3300	10.75%
034.41	Selenium, ICP, Dry ash (mg / kg (ppm))	3	3	9.663	6.291	9.663	6.291	4.540	65.10%	0.2667	11.37%
034.42	Selenium, ICP, Open vessel (mg / kg (ppm))	3	3	15.78	3.671	15.78	3.671	3.245	23.27%	0.0367	10.56%
034.43	Selenium, ICP, Microwave (mg / kg (ppm))	6	6	14.63	1.780	14.63	2.018	1.030	13.80%	0.5250	10.68%
034.52	Selenium, ICP-MS, Open vessel (mg / kg (ppm))	4	3	15.09	0.6860	15.09	0.6860	0.4950	4.55%	0.1533	10.63%
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	9	9	14.05	2.514	14.43	1.863	0.7762	12.91%	0.5916	10.70%
035.01	Sodium, Ion-selective electrode (%)	2	2	0.4085	0.0007						
035.02	Sodium, Em Spect (%)	1	1	0.4150							
035.05	Sodium, Flame Emission (%)	4	4	0.4575	0.0156	0.4575	0.0156	0.0097	3.40%	0.0050	4.50%
035.31	Sodium, AAS, Dry ash (%)	15	14	0.4284	0.0359	0.4284	0.0407	0.0136	9.51%	0.0143	4.54%
035.32	Sodium, AAS, Open vessel (%)	2	2	0.4968	0.1672						
035.41	Sodium, ICP, Dry ash (%)	24	24	0.4363	0.0295	0.4354	0.0274	0.0070	6.30%	0.0177	4.53%
035.42	Sodium, ICP, Open vessel (%)	18	18	0.4314	0.0217	0.4317	0.0240	0.0071	5.55%	0.0127	4.54%
035.43	Sodium, ICP, Microwave (%)	18	18	0.4218	0.0385	0.4256	0.0298	0.0088	6.99%	0.0089	4.55%
035.52	Sodium, ICP-MS, Open vessel (%)	2	2	0.4730	0.0184						
035.53	Sodium, ICP-MS, Microwave (%)	3	3	0.4372	0.0055	0.4372	0.0055	0.0040	1.27%	0.0174	4.53%
035.99	Sodium, Miscellaneous (%)	5	5	0.4320	0.0256	0.4320	0.0256	0.0143	5.94%	0.0144	4.54%
036.04	Sulfur, LECO (%)	3	3	0.9342	0.1375	0.9342	0.1375	0.0993	14.72%	0.0201	4.04%
036.42	Sulfur, ICP, Open vessel (%)	17	17	0.9057	0.0677	0.9057	0.0768	0.0233	8.48%	0.0219	4.06%
036.43	Sulfur, ICP, Microwave (%)	11	11	0.9170	0.1043	0.9192	0.1134	0.0427	12.33%	0.0345	4.05%
036.52	Sulfur, ICP-MS, Open vessel (%)	2	2	3,800	5,372						
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.9395							
036.99	Sulfur, Miscellaneous (%)	2	2	0.7373	0.2655						
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	14	14	3,846	219.9	3,865	196.0	65.49	5.07%	66.01	4.61%
037.32	Zinc, AAS, Open vessel (mg / kg (ppm))	1	1	3,497							
037.33	Zinc, AAS, Microwave (mg / kg (ppm))	3	3	3,982	205.4	3,982	205.4	148.2	5.16%	49.13	4.59%
037.34	Zinc, AAS, Dry ash (mg / kg (ppm))	1	1	3,860							

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037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	23	23	3,826	323.4	3,835	313.5	81.72	8.17%	93.87	4.62%
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	19	18	3,374	913.6	3,574	347.3	102.3	9.72%	130.5	4.67%
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	24	23	3,468	1,191	3,702	495.5	129.1	13.38%	67.53	4.64%
037.44	Zinc, ICP, Dry ash (mg / kg (ppm))	1	1	3,555							
037.51	Zinc, ICP-MS, Dry ash (mg / kg (ppm))	1	1	4,157							
037.52	Zinc, ICP-MS, Open vessel (mg / kg (ppm))	3	3	3,537	639.2	3,537	639.2	461.3	18.07%	41.67	4.68%
037.53	Zinc, ICP-MS, Microwave (mg / kg (ppm))	4	4	3,782	282.0	3,782	282.0	176.3	7.46%	231.8	4.63%
037.99	Zinc, Miscellaneous (mg / kg (ppm))	4	4	4,056	357.9	4,056	357.9	223.7	8.83%	300.8	4.58%
038.41	Molybdenum, ICP, Dry ash (mg / kg (ppm))	2	2	5.114	0.8616						
038.42	Molybdenum, ICP, Open vessel (mg / kg (ppm))	6	6	5.453	0.6615	5.453	0.7502	0.3828	13.76%	0.3838	12.39%
038.43	Molybdenum, ICP, Microwave (mg / kg (ppm))	6	6	5.402	1.110	5.402	1.259	0.6423	23.30%	0.0950	12.41%
038.52	Molybdenum, ICP-MS, Open vessel (mg / kg (ppm))	2	2	5.633	0.5197						
038.53	Molybdenum, ICP-MS, Microwave (mg / kg (ppm))	5	4	5.610	0.5114	5.610	0.5114	0.3196	9.12%	0.1622	12.34%
040.42	Barium, ICP, Open vessel (mg / kg (ppm))	1	1	38.00							
040.53	Barium, ICP-MS, Microwave (mg / kg (ppm))	1	1	34.98							
041.53	Vanadium, ICP-MS, Microwave (mg / kg (ppm))	1	1	12.00							
042.00	Chloride, Titrimetric (%)	1	1	1.200							
099.01	Menadione (form), LC (mg / kg (ppm))	1	1	26.30							
101.99	Choline Chloride, Miscellaneous (mg / kg (ppm))	2	2	4,419	348.3						
102.01	Niacin, Microbiological (mg / kg (ppm))	1	1	1,965							
102.02	Niacin, LC (mg / kg (ppm))	2	2	1,147	1,342						
102.99	Niacin, Miscellaneous (mg / kg (ppm))	3	3	2,192	288.0	2,192	288.0	207.8	13.13%	104.5	5.03%
103.02	Pantothenic Acid, LC (mg / kg (ppm))	2	2	227.9	34.79						
103.99	Pantothenic Acid, Miscellaneous (mg / kg (ppm))	2	2	382.8	27.33						
104.00	Riboflavin, Fluorometric (mg / kg (ppm))	2	2	831.3	42.07						
104.03	Riboflavin, LC (mg / kg (ppm))	6	6	788.7	96.78	805.3	68.45	34.93	8.50%	32.47	5.84%
104.99	Riboflavin, Miscellaneous (mg / kg (ppm))	3	3	901.9	32.89	901.9	32.89	23.74	3.65%	83.69	5.74%
105.00	Thiamine, LC (mg / kg (ppm))	5	5	339.5	57.08	339.5	57.08	31.91	16.81%	34.75	6.65%
105.01	Thiamine, Fluorometer (mg / kg (ppm))	2	2	308.0	1.414						
105.99	Thiamine, Miscellaneous (mg / kg (ppm))	2	2	338.4	36.52						
106.00	Vitamin A, Color (KU / kg)	2	2	215.0	164.4						
106.01	Vitamin A, UV (KU / kg)	1	1	75.90							
106.02	Vitamin A, LC (KU / kg)	18	17	78.55	9.120	78.55	10.34	3.136	13.17%	5.401	
106.99	Vitamin A, Miscellaneous (KU / kg)	1	1	76.28							
107.00	Vitamin B12, Microbiological (µg / kg (ppb))	1	1	1,070							
108.02	Vitamin D3, LC (KU / kg)	7	7	76.39	137.7	28.81	17.29	8.169	60.02%	0.7200	
109.02	Vitamin E, LC (IU / kg)	15	15	1,641	336.0	1,623	342.0	110.4	21.07%	81.96	
109.99	Vitamin E, Miscellaneous (IU / kg)	2	2	1,726	319.9						
112.01	Pyridoxine, LC (µg / g)	5	5	259.6	9.108	259.6	9.108	5.091	3.51%	13.67	
112.99	Pyridoxine, Miscellaneous (µg / g)	3	3	230.3	8.940	230.3	8.940	6.452	3.88%	21.98	

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113.01	Folic Acid, Micro (mg / kg (ppm))	1	1	26.20							
113.02	Folic acid, LC (mg / kg (ppm))	1	1	157.0							
113.99	Folic acid, Miscellaneous (mg / kg (ppm))	1	1	18.45							
114.01	Biotin, Microbiological (mg / kg (ppm))	1	1	0.7720							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	2.105							
120.00	Alanine, Post-col Ninhydrin Der (%)	20	20	0.6101	0.0371	0.6127	0.0363	0.0101	5.92%	0.0071	4.31%
120.02	Alanine, Post-col OPA Der (%)	1	1	0.6300							
120.05	Alanine, Pre-col AQC Der (%)	9	8	0.6126	0.0609	0.6070	0.0555	0.0245	9.14%	0.0074	4.31%
121.00	Arginine, Post-col Ninhydrin Der (%)	20	20	0.7280	0.0734	0.7216	0.0334	0.0093	4.63%	0.0111	4.20%
121.02	Arginine, Post-col OPA Der (%)	1	1	0.7215							
121.05	Arginine, Pre-col AQC Der (%)	9	9	0.7476	0.0696	0.7553	0.0596	0.0248	7.89%	0.0222	4.17%
122.00	Aspartic, Post-col Ninhydrin Der (%)	20	20	1.157	0.0583	1.162	0.0344	0.0096	2.96%	0.0121	3.91%
122.02	Aspartic, Post-col OPA Der (%)	1	1	1.182							
122.05	Aspartic, Pre-col AQC Der (%)	9	8	1.211	0.1419	1.180	0.0769	0.0340	6.51%	0.0221	3.90%
124.00	Cysteine/Cystine, PAO Post-col Ninhydry (%)	21	21	0.2130	0.0304	0.2092	0.0221	0.0060	10.56%	0.0069	5.06%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.2155							
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	9	8	0.1946	0.0839	0.2008	0.0520	0.0230	25.89%	0.0026	5.09%
125.00	Glutamic, Post-col Ninhydrin Der (%)	20	20	2.016	0.1400	2.025	0.0805	0.0225	3.97%	0.0181	3.60%
125.02	Glutamic, Post-col OPA Der (%)	1	1	2.063							
125.05	Glutamic, Pre-col AQC Der (%)	9	8	2.021	0.0899	2.021	0.1019	0.0451	5.04%	0.0185	3.60%
126.00	Glycine, Post-col Ninhydrin Der (%)	20	20	0.6322	0.0349	0.6350	0.0315	0.0088	4.96%	0.0101	4.28%
126.02	Glycine, Post-col OPA Der (%)	1	1	0.6420							
126.05	Glycine, Pre-col AQC Der (%)	9	9	0.6742	0.0325	0.6740	0.0365	0.0152	5.42%	0.0108	4.24%
127.00	Histidine, Post-col Ninhydrin Der (%)	20	19	0.2837	0.0407	0.2845	0.0180	0.0052	6.34%	0.0046	4.83%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.2830							
127.05	Histidine, Pre-col AQC Der (%)	9	9	0.2716	0.0652	0.2791	0.0200	0.0083	7.16%	0.0081	4.85%
128.00	Isoleucine, Post-col Ninhydrin Der (%)	20	19	0.4257	0.0460	0.4337	0.0261	0.0075	6.01%	0.0100	4.54%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.4470							
128.05	Isoleucine, Pre-col AQC Der (%)	9	9	0.4326	0.0577	0.4336	0.0632	0.0263	14.58%	0.0090	4.54%
129.00	Leucine, Post-col Ninhydrin Der (%)	20	20	0.8178	0.0455	0.8214	0.0397	0.0111	4.84%	0.0117	4.12%
129.02	Leucine, Post-col OPA Der (%)	1	1	0.8345							
129.05	Leucine, Pre-col AQC Der (%)	9	8	0.8209	0.0488	0.8144	0.0388	0.0171	4.76%	0.0081	4.13%
130.00	L-Lysine, Post-col Ninhydrin Der (%)	20	20	0.6971	0.0779	0.6939	0.0367	0.0102	5.28%	0.0100	4.23%
130.01	L-Lysine, Pre-col OPA Der (%)	1	1	0.7550							
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.7115							
130.05	L-Lysine, Pre-col AQC Der (%)	10	9	0.6951	0.0338	0.6908	0.0275	0.0115	3.98%	0.0128	4.23%
130.99	L-Lysine, Miscellaneous (%)	3	3	0.7067	0.0236	0.7067	0.0236	0.0171	3.34%	0.0133	4.21%
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	21	20	0.1518	0.0257	0.1563	0.0169	0.0047	10.84%	0.0036	5.29%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.1610							
131.05	Methionine, PAO Pre-col AQC Der (%)	11	11	0.1555	0.0436	0.1600	0.0325	0.0123	20.32%	0.0074	5.27%

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131.99	Methionine, Miscellaneous (%)	4	4	0.1775	0.0087	0.1775	0.0087	0.0054	4.88%	0.0200	5.19%
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	20	20	0.5461	0.0560	0.5383	0.0298	0.0083	5.54%	0.0102	4.39%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.5370							
132.05	Phenylalanine, Pre-col AQC Der (%)	9	9	0.5210	0.0252	0.5227	0.0227	0.0095	4.34%	0.0098	4.41%
133.00	Proline, Post-col Ninhydrin Der (%)	20	19	0.8377	0.1342	0.8196	0.0681	0.0195	8.31%	0.0162	4.12%
133.05	Proline, Pre-col AQC Der (%)	9	8	0.8528	0.0588	0.8442	0.0447	0.0197	5.29%	0.0089	4.10%
134.00	Serine, Post-col Ninhydrin Der (%)	20	20	0.5630	0.0385	0.5615	0.0195	0.0055	3.48%	0.0096	4.36%
134.02	Serine, Post-col OPA Der (%)	1	1	0.5215							
134.05	Serine, Pre-col AQC Der (%)	9	8	0.5568	0.0509	0.5533	0.0485	0.0214	8.76%	0.0129	4.37%
135.00	Threonine, Post-col Ninhydrin Der (%)	20	20	0.4584	0.0301	0.4601	0.0126	0.0035	2.73%	0.0082	4.50%
135.02	Threonine, Post-col OPA Der (%)	1	1	0.4665							
135.05	Threonine, Pre-col AQC Der (%)	9	9	0.4346	0.0450	0.4346	0.0510	0.0213	11.74%	0.0096	4.53%
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	6	6	0.1594	0.0348	0.1594	0.0395	0.0202	24.78%	0.0049	5.27%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	3	3	0.1725	0.0135	0.1725	0.0135	0.0098	7.85%	0.0037	5.21%
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.1625							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	5	4	0.1754	0.0030	0.1754	0.0030	0.0019	1.73%	0.0021	5.20%
136.05	Tryptophan, Pre-col AQC Der (%)	2	2	0.2453	0.1481						
136.99	Tryptophan, Miscellaneous (%)	2	2	0.1600	0.0283						
137.00	Tyrosine, Post-col Ninhydrin Der (%)	14	14	0.3364	0.0906	0.3474	0.0752	0.0251	21.66%	0.0062	4.69%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.4010							
137.05	Tyrosine, Pre-col AQC Der (%)	8	8	0.3861	0.0442	0.3876	0.0466	0.0206	12.03%	0.0118	4.61%
138.00	Valine, Post-col Ninhydrin Der (%)	20	20	0.5753	0.0678	0.5852	0.0508	0.0142	8.68%	0.0145	4.34%
138.02	Valine, Post-col OPA Der (%)	1	1	0.6405							
138.05	Valine, Pre-col AQC Der (%)	9	8	0.5984	0.0326	0.5984	0.0370	0.0164	6.18%	0.0041	4.32%
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.1175	0.0955						
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0035							
160.99	Fructose, Miscellaneous (%)	4	4	0.4201	0.2478	0.4201	0.2478	0.1548	58.97%	0.0483	4.56%
162.99	Glucose, Miscellaneous (%)	4	3	0.2325	0.0847	0.2325	0.0847	0.0748	36.42%	0.0343	4.98%
163.99	Lactose, Miscellaneous (%)	4	1								
164.99	Maltose, Miscellaneous (%)	3	2	0.2550	0.1344	0.2550	0.1344			0.0500	4.91%
165.99	Sucrose, Miscellaneous (%)	4	4	1.853	0.2638	1.853	0.2638	0.1649	14.24%	0.1000	3.65%
166.99	Raffinose, Miscellaneous (%)	2	2	0.4643	0.0343						
167.99	Stachyose, Miscellaneous (%)	2	2	0.2048	0.0986						
400.01	Water Activity, Aqualab chilled mirror (Units)	7	7	0.4863	0.0289	0.4863	0.0328	0.0155	6.74%	0.0044	
400.99	Water Activity, Miscellaneous (Units)	2	2	0.4788	0.0265						
412.01	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	11.59							
516.00	Arsenic, Total, AA, Hydride (mg / kg (ppm))	1	1	1.162							
516.42	Arsenic, Total, ICP, Open vessel (mg / kg (ppm))	1	1	0.9110							
516.43	Arsenic, Total, ICP, Microwave (mg / kg (ppm))	1	1	1.443							

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516.52	Arsenic, Total, ICP-MS, Open vessel (mg / kg (ppm))	2	2	1.233	0.0530						
516.53	Arsenic, Total, ICP-MS, Microwave (mg / kg (ppm))	4	3	1.208	0.0422	1.208	0.0422	0.0304	3.49%	0.0610	15.55%
518.41	Cadmium, ICP, Dry ash (mg / kg (ppm))	1	1	0.4455							
518.43	Cadmium, ICP, Microwave (mg / kg (ppm))	1	1	1.326							
518.52	Cadmium, ICP-MS, Open vessel (mg / kg (ppm))	2	2	0.8438	0.0088						
518.53	Cadmium, ICP-MS, Microwave (mg / kg (ppm))	5	4	0.7738	0.0096	0.7738	0.0096	0.0060	1.25%	0.0241	16.63%
520.42	Chromium, ICP, Open vessel (mg / kg (ppm))	2	2	28.83	0.3069						
520.43	Chromium, ICP, Microwave (mg / kg (ppm))	2	2	30.41	8.950						
520.52	Chromium, ICP-MS, Open vessel (mg / kg (ppm))	1	1	22.90							
520.53	Chromium, ICP-MS, Microwave (mg / kg (ppm))	5	5	29.96	5.677	29.96	5.677	3.173	18.95%	1.171	9.59%
526.41	Lead, ICP, Dry ash (mg / kg (ppm))	1	1	1.133							
526.52	Lead, ICP-MS, Open vessel (mg / kg (ppm))	2	2	2.215	0.0495						
526.53	Lead, ICP-MS, Microwave (mg / kg (ppm))	5	5	2.210	0.1628	2.210	0.1628	0.0910	7.36%	0.1003	14.20%
529.99	Mercury, Miscellaneous (µg / kg (ppb))	1	1	19.00							
539.41	Nickel, ICP, Dry ash (mg / kg (ppm))	1	1	13.28							
539.42	Nickel, ICP, Open vessel (mg / kg (ppm))	1	1	6.950							
539.52	Nickel, ICP-MS, Open vessel (mg / kg (ppm))	1	1	11.25							
539.53	Nickel, ICP-MS, Microwave (mg / kg (ppm))	2	2	14.82	2.087						
702.00	Butyric Acid (4:0), Miscellaneous GC (%)	1	1	0.0055							
704.00	Caproic Acid (6:0), Miscellaneous GC (%)	1	1	0.0440							
706.01	Caprylic acid (8:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0050							
708.01	Capric acid (10:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0005							
710.01	Lauric Acid (12:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0320							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	3	2	0.0047	0.0039	0.0047	0.0039			0.0007	
714.01	Myristic Acid (14:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0365							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	2	1	0.0060							
716.01	Palmitic Acid (16:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.5425							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	2	2	0.5133	0.1155						
718.01	Palmitoleic Acid (9c-16:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0000							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	3	2	0.0095	0.0035	0.0095	0.0035			0.0024	
722.01	Stearic Acid (18:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0580							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.0494							
724.01	Oleic Acid (9c-18:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.3560							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	2	2	0.4207	0.1404						
726.01	Linoleic Acid (9c,12c-18:2), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.5465							
726.02	Linoleic Acid (9c,12c-18:2), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w))	1	1	0.4200							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	3	3	0.4819	0.0360	0.4819	0.0360	0.0259	7.46%	0.0314	
728.01	alpha-Linolenic Acid (9c,12c,15c-18:3), Direct Methylation by Alkali Hydrolysis	1	1	0.1025							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	3	3	0.0557	0.0065	0.0557	0.0065	0.0047	11.58%	0.0044	
730.01	Arachidic Acid (20:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0425							

Test Material Code # 201890

Issue Date : 11/30/2018

Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO PT #fp - Robust sd	Uncertainty (U) - Robust	% RSD - Robust	Average Range (R-bar)	Horwitz %RSD
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	1	1	0.0108							
732.01	Gondoic Acid (11c-20:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0375							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0109							
736.01	Arachidonic Acid (5c,8c,11c,14c-20:4), Direct Methylation by Alkali Hydrolysis	1		0.0000							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	1	1	0.0120							
738.01	Mead Acid (11c,14c,17c-20:3), Direct Methylation by Alkali Hydrolysis & GC (%)	1		0.0000							
740.01	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Direct Methylation by Al	1		0.0000							
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (% (w/w))	1		0.0050							
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	2	1	0.0123							
744.01	Erucic Acid (13c-22:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		0.0000							
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1		0.0050							
746.01	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Direct Methylation	1		0.0000							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (%)	1		0.0050							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0113							
750.01	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Direct Methylation	1		0.0000							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (%)	1		0.0050							
752.01	Nervonic Acid (24:1) isomers, Direct Methylation by Alkali Hydrolysis & GC (%)	1		0.0000							
752.99	Nervonic Acid (24:1) isomers, Miscellaneous (% (w/w))	1		0.0050							
754.02	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Direct Methylation by Acid-f	1	1	0.0600							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w))	2	2	0.0625	0.0035						
756.01	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Direct Methylation by Alkali	1	1	0.4200							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	2	2	0.4975	0.0035						
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	0.7800							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	0.5100							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	0.5750							
770.99	Total Fat (equivalent to NLEA), Miscellaneous (% (w/w))	1	1	2.025							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	2	2	1.648	0.4060						

Notes: Robust statistics not used if < 6 labs reporting, in this case means and SD's may be reported based on Raw Data with obvious blunders removed.

Animal Feed Scheme

Method Precision Report

Methods Reported: 103

Equine Crumbles

Labs Reporting: 192

Test Material Code # 201890

Issue Date : 11/30/2018

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 (%)	45	40	7.293	0.2416	0.2288	0.0859	0.2444	3.14%	1.18%	3.35%	2.844
001.99	Loss on Drying, Miscellaneous (%)	24	21	7.081	0.6009	0.4786	0.1977	0.5179	6.68%	2.76%	7.23%	2.620
002.01	Protein, Crude, Auto Kjel-Foss (%)	19	18	13.99	0.2478	0.2423	0.0735	0.2532	1.73%	0.53%	1.81%	3.444
002.05	Protein, Crude, Copper, Boric Acid (%)	31	27	14.05	0.3105	0.2053	0.0605	0.2141	1.47%	0.43%	1.53%	3.541
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	119	113	14.30	0.3070	0.2255	0.1019	0.2475	1.58%	0.71%	1.73%	2.429
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	10	8	2.024	0.4410	0.3788	0.0255	0.3797	17.95%	1.21%	17.99%	14.91
003.06	Fat, Crude, Pet Ether (%)	11	8	1.879	0.2127	0.1179	0.0522	0.1290	6.08%	2.69%	6.65%	2.470
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	13	1.954	0.2382	0.2322	0.0755	0.2442	11.88%	3.86%	12.49%	3.233
003.10	Fat, Crude, Randall, Pet Ether (%)	30	27	1.697	0.4144	0.2446	0.1001	0.2643	14.96%	6.12%	16.17%	2.641
003.13	Fat, Crude, Randall, Hexane Ext. (%)	8	8	1.840	0.1878	0.1778	0.0856	0.1973	9.66%	4.65%	10.72%	2.305
003.14	Fat, Crude, Ankom (%)	37	33	1.796	0.3208	0.2758	0.0829	0.2880	15.61%	4.69%	16.30%	3.474
004.00	Fiber, Crude, Asbestos Free (%)	15	14	11.83	1.161	0.8861	0.2373	0.9174	7.62%	2.04%	7.89%	3.866
004.03	Fiber, Crude, Fritted Glass (%)	8	8	12.17	2.713	2.705	0.2780	2.720	22.23%	2.28%	22.35%	9.783
004.06	Fiber, Crude, Fibertec (%)	25	23	11.73	0.7446	0.6266	0.1807	0.6521	5.31%	1.53%	5.52%	3.609
004.07	Fiber, Crude, ANKOM (%)	62	60	11.31	2.333	1.815	0.4235	1.863	15.78%	3.68%	16.21%	4.400
005.00	Ash, 2h @ 600°C (%)	89	85	20.78	0.2444	0.2038	0.1213	0.2372	0.98%	0.58%	1.14%	1.955
005.05	Ash, 3h @ 550°C (%)	36	33	20.96	0.2513	0.2483	0.0826	0.2617	1.18%	0.39%	1.25%	3.168
005.99	Ash, Miscellaneous (%)	10	10	20.99	0.3771	0.3677	0.1183	0.3863	1.75%	0.56%	1.84%	3.264
008.02	Fiber, Acid Detergent, Crucible (%)	16	13	14.94	1.384	0.9543	0.1970	0.9744	6.23%	1.29%	6.36%	4.945
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	39	38	13.81	2.113	2.095	0.3877	2.130	15.17%	2.81%	15.43%	5.494
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	14	13	26.36	1.271	0.9006	0.3721	0.9744	3.39%	1.40%	3.66%	2.619
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	40	37	24.13	2.635	2.149	0.3532	2.178	9.00%	1.48%	9.12%	6.166
010.99	Moisture, Miscellaneous (%)	16	14	7.400	0.8587	0.5227	0.2081	0.5627	7.13%	2.84%	7.68%	2.703
011.01	Loss on Drying, 135°C 2hr (%)	68	62	8.463	0.6103	0.4716	0.1245	0.4877	5.51%	1.46%	5.70%	3.919
012.00	Starch, Polarimetric (Ewers) (%)	17	13	12.76	1.388	0.3831	0.1115	0.3990	2.93%	0.85%	3.05%	3.578
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	11	10	11.86	1.529	1.143	0.2972	1.181	9.39%	2.44%	9.70%	3.976
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	16	14	3.389	1.300	1.031	0.1126	1.037	32.49%	3.55%	32.68%	9.206
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	14	12	3.309	1.135	0.6781	0.1153	0.6878	19.17%	3.26%	19.45%	5.968
019.00	Calcium, Ox-MnO4 Vol. (%)	12	10	4.091	0.1064	0.1056	0.0189	0.1073	2.58%	0.46%	2.62%	5.663
019.08	Calcium, EDTA (%)	13	12	3.967	0.5747	0.2910	0.0593	0.2970	7.09%	1.44%	7.23%	5.011
019.31	Calcium, AAS, Dry ash (%)	21	19	4.021	0.2171	0.1962	0.0650	0.2067	4.85%	1.61%	5.11%	3.178
019.41	Calcium, ICP, Dry ash (%)	26	26	4.075	0.2399	0.2271	0.1092	0.2520	5.57%	2.68%	6.18%	2.307
019.42	Calcium, ICP, Open vessel (%)	23	21	4.071	0.2608	0.2206	0.0878	0.2374	5.39%	2.15%	5.80%	2.705
019.43	Calcium, ICP, Microwave (%)	26	23	4.139	0.3237	0.1610	0.0328	0.1643	3.96%	0.81%	4.04%	5.013
022.31	Copper, AAS, Dry ash (mg / kg (ppm))	16	16	862.9	48.12	47.74	8.593	48.50	5.53%	1.00%	5.62%	5.645

Method Code	Analyte and Method	Total # Labs Submitting	# Labs used in Precision Calcs	Precision Mean	Precision SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
022.41	Copper, ICP, Dry ash (mg / kg (ppm))	24	23	842.2	80.35	66.66	17.66	68.96	7.83%	2.07%	8.10%	3.905
022.42	Copper, ICP, Open vessel (mg / kg (ppm))	21	18	893.1	95.17	41.77	9.726	42.88	4.77%	1.11%	4.90%	4.409
022.43	Copper, ICP, Microwave (mg / kg (ppm))	23	21	890.4	114.9	44.59	16.45	47.52	5.14%	1.90%	5.48%	2.889
025.31	Iron, AAS, Dry ash (mg / kg (ppm))	16	14	10,514	2,682	895.1	222.6	922.4	8.02%	1.99%	8.27%	4.144
025.41	Iron, ICP, Dry ash (mg / kg (ppm))	24	22	9,537	3,602	2,944	183.5	2,950	28.99%	1.81%	29.05%	16.08
025.42	Iron, ICP, Open vessel (mg / kg (ppm))	17	15	9,580	2,549	1,341	343.0	1,384	13.29%	3.40%	13.72%	4.036
025.43	Iron, ICP, Microwave (mg / kg (ppm))	21	17	9,544	3,967	1,927	241.6	1,942	17.60%	2.21%	17.74%	8.041
027.31	Magnesium, AAS, Dry ash (%)	14	13	0.4800	0.0406	0.0398	0.0073	0.0405	8.35%	1.53%	8.49%	5.541
027.41	Magnesium, ICP, Dry ash (%)	24	23	0.4827	0.0346	0.0335	0.0121	0.0357	6.95%	2.50%	7.39%	2.951
027.42	Magnesium, ICP, Open vessel (%)	22	20	0.4935	0.0336	0.0291	0.0084	0.0303	5.95%	1.72%	6.19%	3.600
027.43	Magnesium, ICP, Microwave (%)	23	20	0.4686	0.0624	0.0443	0.0063	0.0447	9.24%	1.31%	9.33%	7.105
028.31	Manganese, AAS, Dry ash (mg / kg (ppm))	16	15	265.9	38.88	18.24	3.035	18.49	6.65%	1.11%	6.74%	6.094
028.41	Manganese, ICP, Dry ash (mg / kg (ppm))	24	21	261.7	39.86	28.97	5.445	29.47	10.80%	2.03%	10.99%	5.412
028.42	Manganese, ICP, Open vessel (mg / kg (ppm))	21	19	281.4	21.12	16.33	7.322	17.89	5.86%	2.63%	6.43%	2.444
028.43	Manganese, ICP, Microwave (mg / kg (ppm))	21	18	281.9	18.71	14.16	2.395	14.36	5.09%	0.86%	5.17%	5.997
031.01	Phosphorus, Photometric (%)	47	40	2.598	0.2528	0.1204	0.0340	0.1251	4.59%	1.30%	4.77%	3.679
031.41	Phosphorus, ICP, Dry ash (%)	25	21	2.562	0.2288	0.2052	0.0317	0.2077	8.07%	1.24%	8.16%	6.560
031.42	Phosphorus, ICP, Open vessel (%)	22	20	2.493	0.2072	0.2088	0.0533	0.2155	8.38%	2.14%	8.65%	4.043
031.43	Phosphorus, ICP, Microwave (%)	23	23	2.606	0.1739	0.1706	0.0474	0.1771	6.55%	1.82%	6.80%	3.738
032.31	Potassium, AAS, Dry ash (%)	14	13	1.436	0.0460	0.0448	0.0148	0.0471	3.12%	1.03%	3.28%	3.177
032.41	Potassium, ICP, Dry ash (%)	24	22	1.427	0.0700	0.0475	0.0476	0.0673	3.31%	3.32%	4.69%	1.412
032.42	Potassium, ICP, Open vessel (%)	22	20	1.463	0.0721	0.0688	0.0359	0.0776	4.71%	2.46%	5.31%	2.162
032.43	Potassium, ICP, Microwave (%)	24	22	1.453	0.0879	0.0808	0.0254	0.0847	5.54%	1.74%	5.80%	3.332
033.00	Salt as chloride, Sol Cl (%)	23	20	1.650	0.4836	0.4173	0.0257	0.4181	24.23%	1.49%	24.28%	16.29
033.01	Salt as chloride, Poten Cl (%)	30	26	1.994	0.0366	0.0236	0.0185	0.0299	1.18%	0.92%	1.50%	1.622
033.99	Salt, Miscellaneous (%)	9	8	1.672	0.4047	0.4278	0.0555	0.4313	25.83%	3.35%	26.04%	7.773
034.53	Selenium, ICP-MS, Microwave (mg / kg (ppm))	9	8	14.05	2.514	1.278	0.6254	1.423	8.65%	4.23%	9.63%	2.275
035.31	Sodium, AAS, Dry ash (%)	15	14	0.4284	0.0359	0.0346	0.0137	0.0372	8.07%	3.21%	8.69%	2.708
035.41	Sodium, ICP, Dry ash (%)	24	22	0.4363	0.0295	0.0240	0.0143	0.0279	5.55%	3.30%	6.45%	1.958
035.42	Sodium, ICP, Open vessel (%)	18	18	0.4314	0.0217	0.0198	0.0126	0.0235	4.60%	2.91%	5.44%	1.870
035.43	Sodium, ICP, Microwave (%)	18	16	0.4218	0.0385	0.0227	0.0070	0.0237	5.25%	1.61%	5.50%	3.407
036.42	Sulfur, ICP, Open vessel (%)	17	17	0.9057	0.0677	0.0660	0.0216	0.0694	7.29%	2.39%	7.67%	3.211
036.43	Sulfur, ICP, Microwave (%)	11	11	0.9170	0.1043	0.1022	0.0290	0.1063	11.15%	3.16%	11.59%	3.665
037.31	Zinc, AAS, Dry ash (mg / kg (ppm))	14	12	3,846	219.9	148.7	47.95	156.3	3.81%	1.23%	4.00%	3.259
037.41	Zinc, ICP, Dry ash (mg / kg (ppm))	23	22	3,826	323.4	326.1	78.82	335.4	8.53%	2.06%	8.77%	4.256
037.42	Zinc, ICP, Open vessel (mg / kg (ppm))	19	17	3,374	913.6	354.7	137.5	380.5	9.93%	3.85%	10.65%	2.766
037.43	Zinc, ICP, Microwave (mg / kg (ppm))	24	20	3,468	1,191	486.2	55.59	489.4	12.71%	1.45%	12.79%	8.803
106.02	Vitamin A, LC (KU / kg)	18	16	78.55	9.120	8.567	3.954	9.436	11.00%	5.08%	12.11%	2.386
109.02	Vitamin E, LC (IU / kg)	15	14	1,641	336.0	325.1	72.61	333.1	19.48%	4.35%	19.96%	4.588
120.00	Alanine, Post-col Ninhydrin Der (%)	20	20	0.6101	0.0371	0.0368	0.0064	0.0374	6.03%	1.05%	6.13%	5.837
120.05	Alanine, Pre-col AQC Der (%)	9	8	0.6126	0.0609	0.0607	0.0070	0.0611	9.91%	1.14%	9.98%	8.724
121.00	Arginine, Post-col Ninhydrin Der (%)	20	18	0.7280	0.0734	0.0397	0.0084	0.0406	5.55%	1.18%	5.67%	4.825
121.05	Arginine, Pre-col AQC Der (%)	9	8	0.7476	0.0696	0.0403	0.0223	0.0460	5.25%	2.91%	6.01%	2.063

Test Material Code # 201890

Issue Date : 11/30/2018

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
122.00	Aspartic, Post-col Ninhydrin Der (%)	20	19	1.157	0.0583	0.0333	0.0104	0.0349	2.85%	0.89%	2.99%	3.342
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	21	20	0.2130	0.0304	0.0245	0.0069	0.0254	11.71%	3.28%	12.16%	3.705
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	9	8	0.1946	0.0839	0.0838	0.0035	0.0839	43.08%	1.82%	43.12%	23.67
125.00	Glutamic, Post-col Ninhydrin Der (%)	20	18	2.016	0.1400	0.0881	0.0136	0.0891	4.29%	0.66%	4.34%	6.573
125.05	Glutamic, Pre-col AQC Der (%)	9	8	2.021	0.0899	0.0889	0.0190	0.0909	4.40%	0.94%	4.50%	4.774
126.00	Glycine, Post-col Ninhydrin Der (%)	20	18	0.6322	0.0349	0.0235	0.0078	0.0248	3.67%	1.23%	3.87%	3.158
126.05	Glycine, Pre-col AQC Der (%)	9	9	0.6742	0.0325	0.0310	0.0136	0.0339	4.60%	2.02%	5.02%	2.487
127.00	Histidine, Post-col Ninhydrin Der (%)	20	16	0.2837	0.0407	0.0287	0.0026	0.0288	10.07%	0.90%	10.11%	11.24
128.00	Isoleucine, Post-col Ninhydrin Der (%)	20	17	0.4257	0.0460	0.0251	0.0075	0.0262	5.78%	1.71%	6.03%	3.519
128.05	Isoleucine, Pre-col AQC Der (%)	9	8	0.4326	0.0577	0.0457	0.0061	0.0461	10.26%	1.38%	10.35%	7.524
129.00	Leucine, Post-col Ninhydrin Der (%)	20	19	0.8178	0.0455	0.0328	0.0101	0.0343	3.98%	1.22%	4.16%	3.403
130.00	L-Lysine, Post-col Ninhydrin Der (%)	20	18	0.6971	0.0779	0.0537	0.0069	0.0542	7.86%	1.01%	7.93%	7.821
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	21	19	0.1518	0.0257	0.0198	0.0037	0.0201	12.73%	2.36%	12.95%	5.494
131.05	Methionine, PAO Pre-col AQC Der (%)	11	9	0.1555	0.0436	0.0288	0.0037	0.0291	17.41%	2.25%	17.56%	7.811
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	20	19	0.5461	0.0560	0.0350	0.0095	0.0362	6.52%	1.77%	6.76%	3.811
132.05	Phenylalanine, Pre-col AQC Der (%)	9	9	0.5210	0.0252	0.0244	0.0086	0.0259	4.69%	1.65%	4.97%	3.009
133.00	Proline, Post-col Ninhydrin Der (%)	20	18	0.8377	0.1342	0.0625	0.0152	0.0643	7.71%	1.88%	7.94%	4.220
134.00	Serine, Post-col Ninhydrin Der (%)	20	19	0.5630	0.0385	0.0305	0.0093	0.0319	5.37%	1.64%	5.61%	3.430
134.05	Serine, Pre-col AQC Der (%)	9	8	0.5568	0.0509	0.0496	0.0162	0.0522	8.91%	2.91%	9.37%	3.217
135.00	Threonine, Post-col Ninhydrin Der (%)	20	18	0.4584	0.0301	0.0217	0.0069	0.0227	4.70%	1.49%	4.93%	3.305
135.05	Threonine, Pre-col AQC Der (%)	9	8	0.4346	0.0450	0.0444	0.0063	0.0449	10.09%	1.43%	10.19%	7.117
137.00	Tyrosine, Post-col Ninhydrin Der (%)	14	12	0.3364	0.0906	0.0654	0.0036	0.0655	18.78%	1.02%	18.81%	18.39
137.05	Tyrosine, Pre-col AQC Der (%)	8	8	0.3861	0.0442	0.0437	0.0095	0.0447	11.32%	2.46%	11.58%	4.716
138.00	Valine, Post-col Ninhydrin Der (%)	20	18	0.5753	0.0678	0.0386	0.0114	0.0403	6.51%	1.93%	6.79%	3.526
138.05	Valine, Pre-col AQC Der (%)	9	8	0.5984	0.0326	0.0325	0.0046	0.0328	5.42%	0.78%	5.48%	7.061

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