



## Animal Feed Scheme

Dry Dog Feed

Test Material Code # 202125

## Method Summary Report

(Precision Report Follows)

# Labs Reporting: 203

# Methods Reported: 362

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 #fp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
000.02	Urea, As protein, Colorimetric (%)	1	1	0.2000							
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	59	57	7.458	0.2747	7.431	0.1644	0.0272	2.21%	0.0956	2.96%
001.99	Loss on Drying, Miscellaneous (%)	23	22	7.165	0.7405	7.252	0.5047	0.1345	6.96%	0.0967	2.97%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	4	4	7.517	0.1239	7.517	0.1239	0.0619	1.65%	0.0470	2.95%
001.03	Loss on Drying, Low temp. methods (%)	2	2	6.998	0.5834						
001.05	Loss on Drying, LECO (%)	1	1	7.724							
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	144	141	23.64	0.4192	23.60	0.3441	0.0362	1.46%	0.2103	2.06%
002.05	Protein, Crude, Copper, Boric Acid (%)	31	29	23.34	0.3481	23.31	0.2569	0.0596	1.10%	0.1032	2.07%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	17	17	23.38	0.3253	23.34	0.2596	0.0787	1.11%	0.1532	2.07%
002.11	Protein, Crude, NIR (%)	6	6	22.71	1.020	22.93	0.5951	0.3037	2.60%	0.1517	2.09%
002.00	Protein, Crude, Crude (%)	3	3	23.51	0.5755	23.51	0.5755	0.3323	2.45%	0.4867	2.06%
002.04	Protein, Crude, Copper Catalyst (%)	3	3	23.34	0.2233	23.34	0.2233	0.1289	0.96%	0.0867	2.07%
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	2	2	23.37	0.1082						
002.08	Protein, Crude, Cu/Ti (%)	2	2	23.51	1.126						
003.14	Fat, Crude, Ankom (%)	40	39	8.331	0.7734	8.298	0.3912	0.0783	4.71%	0.1360	2.91%
003.10	Fat, Crude, Randall, Pet Ether (%)	28	26	8.803	0.8063	8.705	0.5390	0.1321	6.19%	0.0949	2.89%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	18	18	9.915	1.729	9.915	1.961	0.5777	19.78%	0.2183	2.83%
003.06	Fat, Crude, Pet Ether (%)	17	17	8.564	1.080	8.525	0.4763	0.1444	5.59%	0.1448	2.90%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	12	12	8.972	1.053	8.779	0.6004	0.2166	6.84%	0.2358	2.88%
003.11	Fat, Crude, NIR (%)	7	7	11.72	1.429	11.72	1.621	0.7658	13.83%	0.3229	2.76%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	6	5	8.864	0.4760	8.864	0.4760	0.2661	5.37%	0.0520	2.88%
003.12	Fat, Crude, Hexane Ext (%)	4	4	8.388	1.029	8.388	1.029	0.5147	12.27%	0.2550	2.90%
003.99	Fat, Crude, Miscellaneous (%)	4	4	10.71	1.811	10.71	1.811	0.9054	16.91%	0.1550	2.80%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	3	3	8.319	0.5691	8.319	0.5691	0.3286	6.84%	0.2510	2.91%
004.07	Fiber, Crude, ANKOM (%)	71	71	2.103	1.086	1.909	0.4948	0.0734	25.91%	0.1517	3.63%
004.06	Fiber, Crude, Fibertec (%)	17	17	2.028	0.6673	1.908	0.2859	0.0867	14.98%	0.1106	3.63%
004.00	Fiber, Crude, Asbestos Free (%)	16	15	2.094	0.4305	2.043	0.3430	0.1107	16.79%	0.1312	3.59%
004.03	Fiber, Crude, Fritted Glass (%)	5	4	1.950	0.2812	1.950	0.2812	0.1406	14.42%	0.2850	3.62%
004.11	Fiber, Crude, NIR (%)	4	4	2.719	1.059	2.719	1.059	0.5295	38.95%	0.2425	3.44%

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004.01	Fiber, Crude, Sing Filt (%)	1	1	4.250							
005.00	Ash, 2h @ 600°C (%)	103	101	6.479	0.1212	6.483	0.1036	0.0129	1.60%	0.0764	3.02%
005.05	Ash, 3h @ 550°C (%)	24	23	6.499	0.0979	6.503	0.0936	0.0244	1.44%	0.0943	3.02%
005.99	Ash, Miscellaneous (%)	9	9	6.392	0.2472	6.392	0.2798	0.1166	4.38%	0.1186	3.03%
005.11	Ash, NIR (%)	3	3	6.158	1.266	6.158	1.266	0.8952	20.56%	0.2500	3.04%
005.02	Ash, LECO (%)	1	1	5.973							
005.03	Ash, Microwave furnace (%)	1	1	6.505							
006.00	Total Sugars, As sucrose (%)	2	2	1.870	0.0000						
006.99	Total Sugars, Miscellaneous (%)	1	1	1.950							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	41	40	4.134	1.487	4.082	1.508	0.2981	36.94%	0.2872	3.24%
008.02	Fiber, Acid Detergent, Crucible (%)	12	12	3.469	0.6234	3.439	0.6381	0.2302	18.55%	0.1751	3.32%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	3	3	4.680	2.092	4.680	2.092	1.208	44.70%	0.3600	3.17%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	6.000							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	38	37	10.80	2.929	10.31	1.995	0.4101	19.35%	0.4928	2.82%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	12	12	10.09	2.498	10.09	2.833	1.022	28.08%	0.3499	2.82%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	3	3	13.67	1.846	13.67	1.846	1.066	13.50%	0.3333	2.70%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	9.400							
010.99	Moisture, Miscellaneous (%)	15	15	7.850	1.644	7.556	0.5872	0.1895	7.77%	0.1481	2.95%
010.11	Moisture, NIR (%)	6	6	7.444	0.5497	7.444	0.6233	0.3181	8.37%	0.1850	2.96%
010.03	Moisture, Karl-Fischer (%)	2	2	7.703	0.2440						
011.01	Loss on Drying, HT, 135°C 2hr (%)	77	76	7.946	0.5713	8.014	0.2572	0.0369	3.21%	0.0772	2.92%
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	5	5	7.654	0.3148	7.654	0.3148	0.1408	4.11%	0.1942	2.94%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	4	3	7.990	0.1598	7.990	0.1598	0.0922	2.00%	0.0200	2.93%
011.03	Loss on Drying, HT, 130°C, 1 hour, Flour (%)	2	2	7.600	0.2121						
012.00	Starch, Polarimetric (Ewers) (%)	10	10	40.12	0.9148	40.12	1.037	0.4101	2.59%	0.2390	1.58%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	9	9	37.99	4.671	38.86	2.901	1.209	7.47%	0.8561	1.60%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	4	4	37.42	2.129	37.42	2.129	1.065	5.69%	0.8625	1.63%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	3	3	38.71	2.361	38.71	2.361	1.670	6.10%	0.4889	1.61%
012.11	Starch, NIR (%)	1	1	39.92							
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	38.61							
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	31	30	11.83	0.7677	11.91	0.6007	0.1371	5.04%	0.2564	2.75%
013.02	Fat, Acid Pretreat, Mojonniier, Bak Ext (%)	26	25	12.06	0.7530	12.15	0.6234	0.1559	5.13%	0.1922	2.75%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	17	16	11.98	0.7025	11.99	0.7697	0.2405	6.42%	0.2734	2.75%
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	9	8	11.58	0.4817	11.58	0.5462	0.2414	4.72%	0.2217	2.77%
013.08	Fat, Base Pretreat, Roese-Gottlieb Modified (%)	1	1	9.057							
015.43	Aluminum, ICP, Microwave (ppm)	8	8	82.68	16.06	82.68	18.22	8.051	22.03%	5.156	8.23%
015.41	Aluminum, ICP, Dry ash (ppm)	7	6	69.45	13.17	69.45	14.93	7.621	21.50%	0.7177	8.45%
015.53	Aluminum, ICP-MS, Microwave (ppm)	3	3	74.12	6.746	74.12	6.746	3.895	9.10%	5.310	8.37%
015.42	Aluminum, ICP, Open vessel (ppm)	2	2	41.17	13.18						
017.41	Boron, ICP, Dry ash (ppm)	6	6	4.536	0.5722	4.555	0.6048	0.3086	13.28%	0.6850	12.73%

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017.42	Boron, ICP, Open vessel (ppm)	6	5	4.046	1.453	4.046	1.453	0.8123	35.91%	0.1828	12.96%
017.43	Boron, ICP, Microwave (ppm)	7	5	4.605	0.3361	4.605	0.3361	0.1879	7.30%	0.1111	12.71%
017.53	Boron, ICP-MS, Microwave (ppm)	2	2	4.830	0.5513						
019.43	Calcium, ICP, Microwave (%)	32	<b>32</b>	1.348	0.0856	<b>1.348</b>	0.0881	0.0195	6.53%	0.0400	3.82%
019.41	Calcium, ICP, Dry ash (%)	27	<b>26</b>	1.363	0.0727	<b>1.356</b>	0.0567	0.0139	4.18%	0.0214	3.82%
019.31	Calcium, AAS, Dry ash (%)	22	<b>20</b>	1.353	0.0879	<b>1.349</b>	0.0896	0.0250	6.64%	0.0272	3.82%
019.42	Calcium, ICP, Open vessel (%)	19	<b>19</b>	1.377	0.1036	<b>1.378</b>	0.1090	0.0313	7.91%	0.0574	3.81%
019.44	Calcium, ICP, Dry ash (%)	12	<b>12</b>	1.324	0.0703	<b>1.315</b>	0.0527	0.0190	4.00%	0.0493	3.84%
019.08	Calcium, EDTA (%)	12	<b>11</b>	1.372	0.1010	<b>1.371</b>	0.1009	0.0380	7.36%	0.0184	3.81%
019.00	Calcium, Ox-Mn04 Vol. (%)	7	<b>7</b>	1.340	0.1028	<b>1.340</b>	0.1166	0.0551	8.70%	0.0324	3.83%
019.53	Calcium, ICP-MS, Microwave (%)	7	<b>7</b>	1.300	0.0368	<b>1.300</b>	0.0418	0.0197	3.21%	0.0723	3.84%
019.99	Calcium, Miscellaneous (%)	6	<b>6</b>	1.250	0.1578	<b>1.287</b>	0.0466	0.0238	3.62%	0.0608	3.85%
019.52	Calcium, ICP-MS, Open vessel (%)	3	<b>3</b>	1.268	0.1083	1.268	0.1083	0.0625	8.53%	0.0368	3.86%
019.03	Calcium, Semiauto (Autoanalyzer) (%)	1	1	1.453							
019.09	Calcium, Ion-selective electrode (%)	1	1	1.205							
019.32	Calcium, AAS, Open vessel (%)	1	1	1.290							
019.33	Calcium, AAS, Microwave (%)	1	1	1.370							
019.51	Calcium, ICP-MS, Dry ash (%)	1	1	1.250							
021.43	Cobalt, ICP, Microwave (ppm)	8	<b>6</b>	2.242	2.123	<b>2.242</b>	2.407	1.228	107.39%	1.219	14.17%
021.53	Cobalt, ICP-MS, Microwave (ppm)	3	3	0.0854	0.0181	0.0854	0.0181	0.0104	21.15%	0.0192	22.00%
021.41	Cobalt, ICP, Dry ash (ppm)	2	2	0.2064	0.2211						
021.52	Cobalt, ICP-MS, Open vessel (ppm)	1	1	0.1300							
021.31	Cobalt, AAS, Dry ash (ppm)	1		0.7500							
022.43	Copper, ICP, Microwave (ppm)	21	<b>21</b>	13.48	1.149	<b>13.49</b>	0.8412	0.2295	6.24%	0.6434	10.81%
022.42	Copper, ICP, Open vessel (ppm)	17	<b>16</b>	13.56	0.7643	<b>13.55</b>	0.8340	0.2606	6.16%	0.4248	10.81%
022.41	Copper, ICP, Dry ash (ppm)	16	<b>15</b>	14.21	2.200	<b>13.98</b>	1.754	0.5663	12.55%	0.6699	10.76%
022.31	Copper, AAS, Dry ash (ppm)	10	<b>9</b>	20.30	14.89	<b>16.85</b>	6.774	2.822	40.20%	1.649	10.46%
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	13.44	0.9465	13.44	0.9465	0.4233	7.04%	1.145	10.82%
022.99	Copper, Miscellaneous (ppm)	3	3	13.17	0.2887	13.17	0.2887	0.2041	2.19%	0.0667	10.85%
022.33	Copper, AAS, Microwave (ppm)	1	1	14.78							
022.44	Copper, ICP, Dry ash (ppm)	1	1	14.00							
022.52	Copper, ICP-MS, Open vessel (ppm)	1	1	13.00							
025.43	Iron, ICP, Microwave (ppm)	22	<b>21</b>	216.6	23.04	<b>213.1</b>	16.29	4.445	7.65%	6.555	7.14%
025.41	Iron, ICP, Dry ash (ppm)	17	<b>17</b>	214.4	26.68	<b>209.6</b>	14.38	4.359	6.86%	6.962	7.16%
025.42	Iron, ICP, Open vessel (ppm)	14	<b>14</b>	202.4	10.27	<b>202.6</b>	11.17	3.730	5.51%	5.953	7.19%
025.31	Iron, AAS, Dry ash (ppm)	12	<b>12</b>	200.1	16.52	<b>200.2</b>	18.61	6.714	9.30%	4.461	7.21%
025.53	Iron, ICP-MS, Microwave (ppm)	3	3	207.5	11.35	207.5	11.35	6.555	5.47%	6.823	7.17%
025.99	Iron, Miscellaneous (ppm)	2	2	204.0	1.414						
025.52	Iron, ICP-MS, Open vessel (ppm)	1	1	138.6							
027.43	Magnesium, ICP, Microwave (%)	23	<b>23</b>	0.1104	0.0133	<b>0.1117</b>	0.0075	0.0019	6.69%	0.0040	5.56%

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027.41	Magnesium, ICP, Dry ash (%)	19	18	0.1147	0.0074	0.1145	0.0075	0.0022	6.50%	0.0026	5.54%
027.42	Magnesium, ICP, Open vessel (%)	17	17	0.1162	0.0073	0.1162	0.0083	0.0025	7.11%	0.0030	5.53%
027.44	Magnesium, ICP, Dry ash (%)	10	10	0.1146	0.0031	0.1147	0.0031	0.0012	2.66%	0.0058	5.54%
027.31	Magnesium, AAS, Dry ash (%)	8	8	0.1161	0.0097	0.1171	0.0066	0.0029	5.66%	0.0020	5.52%
027.53	Magnesium, ICP-MS, Microwave (%)	5	4	0.1147	0.0005	0.1147	0.0005	0.0002	0.42%	0.0050	5.54%
027.99	Magnesium, Miscellaneous (%)	4	4	0.1050	0.0173	0.1050	0.0173			0.0000	5.61%
027.52	Magnesium, ICP-MS, Open vessel (%)	2	2	0.1150	0.0129						
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.1250							
027.33	Magnesium, AAS, Microwave (%)	1	1	0.1200							
028.43	Manganese, ICP, Microwave (ppm)	20	19	54.00	3.445	53.80	3.386	0.9709	6.29%	1.533	8.78%
028.42	Manganese, ICP, Open vessel (ppm)	17	17	55.55	5.629	55.52	6.322	1.917	11.39%	2.572	8.74%
028.41	Manganese, ICP, Dry ash (ppm)	17	16	55.70	4.869	55.61	5.332	1.666	9.59%	1.896	8.74%
028.31	Manganese, AAS, Dry ash (ppm)	11	11	51.06	5.570	51.84	4.183	1.576	8.07%	1.891	8.83%
028.53	Manganese, ICP-MS, Microwave (ppm)	5	5	56.85	1.636	56.85	1.636	0.7314	2.88%	6.629	8.71%
028.99	Manganese, Miscellaneous (ppm)	3	3	52.90	3.772	52.90	3.772	2.178	7.13%	1.800	8.80%
028.44	Manganese, ICP, Dry ash (ppm)	2	2	54.27	3.914						
028.33	Manganese, AAS, Microwave (ppm)	1	1	55.13							
028.52	Manganese, ICP-MS, Open vessel (ppm)	1	1	59.40							
031.01	Phosphorus, Photometric (%)	37	36	0.8826	0.0557	0.8898	0.0348	0.0072	3.91%	0.0155	4.07%
031.43	Phosphorus, ICP, Microwave (%)	32	32	0.9116	0.0435	0.9112	0.0403	0.0089	4.42%	0.0345	4.06%
031.41	Phosphorus, ICP, Dry ash (%)	28	28	0.9105	0.0474	0.9102	0.0451	0.0107	4.95%	0.0168	4.06%
031.42	Phosphorus, ICP, Open vessel (%)	21	20	0.8926	0.0625	0.8937	0.0655	0.0183	7.33%	0.0192	4.07%
031.44	Phosphorus, ICP, Dry ash (%)	11	11	0.8784	0.0242	0.8783	0.0273	0.0103	3.10%	0.0365	4.08%
031.53	Phosphorus, ICP-MS, Microwave (%)	7	7	0.8649	0.0450	0.8649	0.0510	0.0241	5.89%	0.0537	4.09%
031.99	Phosphorus, Miscellaneous (%)	5	4	0.8863	0.0330	0.8863	0.0330	0.0165	3.72%	0.0225	4.07%
031.03	Phosphorus, Autoanalyzer (%)	3	3	0.9508	0.0488	0.9508	0.0488	0.0282	5.13%	0.0168	4.03%
031.52	Phosphorus, ICP-MS, Open vessel (%)	2	2	0.9349	0.1070						
031.06	Phosphorus, Hach Method (%)	1	1	0.9750							
031.51	Phosphorus, ICP-MS, Dry ash (%)	1	1	0.9100							
032.43	Potassium, ICP, Microwave (%)	23	22	0.6973	0.0305	0.6958	0.0312	0.0083	4.49%	0.0126	4.22%
032.41	Potassium, ICP, Dry ash (%)	20	20	0.6914	0.0361	0.6889	0.0352	0.0098	5.11%	0.0162	4.23%
032.42	Potassium, ICP, Open vessel (%)	15	15	0.6989	0.0386	0.7002	0.0408	0.0132	5.83%	0.0136	4.22%
032.31	Potassium, AAS, Dry ash (%)	10	10	0.6579	0.0438	0.6594	0.0463	0.0183	7.02%	0.0103	4.26%
032.44	Potassium, ICP, Dry ash (%)	10	10	0.6773	0.0259	0.6814	0.0178	0.0070	2.61%	0.0427	4.24%
032.53	Potassium, ICP-MS, Microwave (%)	5	4	0.6771	0.0217	0.6771	0.0217	0.0126	3.21%	0.0060	4.24%
032.99	Potassium, Miscellaneous (%)	4	4	0.6850	0.0534	0.6850	0.0534	0.0267	7.79%	0.0050	4.23%
032.52	Potassium, ICP-MS, Open vessel (%)	3	3	0.6687	0.0178	0.6687	0.0178	0.0102	2.65%	0.0245	4.25%
032.08	Potassium, Ion-selective electrode (%)	1	1	0.5500							
032.32	Potassium, AAS, Open vessel (%)	1	1	0.7050							
033.01	Salt as chloride, Poten Cl (%)	21	20	1.249	0.1926	1.304	0.0350	0.0098	2.68%	0.0106	3.84%

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033.00	Salt as chloride, Sol Cl (%)	15	15	1.190	0.1875	1.217	0.1297	0.0419	10.66%	0.0629	3.88%
033.99	Salt, Miscellaneous (%)	6	6	1.192	0.1854	1.211	0.1635	0.0834	13.50%	0.0300	3.89%
033.05	Salt as chloride, Ion Sel Electrode (%)	4	4	1.158	0.1405	1.158	0.1405	0.0703	12.14%	0.0250	3.91%
033.03	Salt as chloride, Quantab (%)	3	3	0.9717	0.2517	0.9717	0.2517	0.1453	25.90%	0.0567	4.02%
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	6	6	0.3729	0.1715	0.3400	0.1116	0.0569	32.82%	0.0278	18.82%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	4	3	0.2895	0.0481	0.2895	0.0481	0.0278	16.61%	0.0217	19.28%
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	3	2	6.373	8.227	6.373	8.227			0.2510	12.11%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	1	1	0.4200							
035.41	Sodium, ICP, Dry ash (%)	30	29	0.4520	0.0211	0.4499	0.0149	0.0035	3.32%	0.0164	4.51%
035.43	Sodium, ICP, Microwave (%)	24	24	0.4512	0.0274	0.4485	0.0205	0.0052	4.58%	0.0081	4.51%
035.42	Sodium, ICP, Open vessel (%)	16	16	0.4505	0.0360	0.4536	0.0332	0.0104	7.32%	0.0089	4.51%
035.31	Sodium, AAS, Dry ash (%)	12	12	0.4454	0.0222	0.4458	0.0245	0.0088	5.49%	0.0051	4.52%
035.53	Sodium, ICP-MS, Microwave (%)	5	5	0.4495	0.0177	0.4495	0.0177	0.0079	3.94%	0.0093	4.51%
035.99	Sodium, Miscellaneous (%)	4	3	0.4317	0.0153	0.4317	0.0153	0.0088	3.54%	0.0100	4.54%
035.01	Sodium, Ion-selective electrode (%)	2	2	0.4303	0.0704						
035.52	Sodium, ICP-MS, Open vessel (%)	2	2	0.4670	0.0182						
035.05	Sodium, Flame Emission (%)	1	1	0.4600							
035.32	Sodium, AAS, Open vessel (%)	1	1	0.4150							
036.42	Sulfur, ICP, Open vessel (%)	19	19	0.3267	0.0257	0.3256	0.0259	0.0074	7.97%	0.0094	4.74%
036.43	Sulfur, ICP, Microwave (%)	17	17	0.3410	0.0137	0.3411	0.0149	0.0045	4.38%	0.0090	4.70%
036.04	Sulfur, LECO (%)	3	3	0.3508	0.0080	0.3508	0.0080	0.0046	2.29%	0.0070	4.68%
036.53	Sulfur, ICP-MS, Microwave (%)	2	2	0.3358	0.0202						
036.99	Sulfur, Miscellaneous (%)	2	2	0.3050	0.0212						
036.52	Sulfur, ICP-MS, Open vessel (%)	1	1	0.3519							
037.43	Zinc, ICP, Microwave (ppm)	22	21	207.8	10.79	206.8	8.348	2.277	4.04%	4.500	7.17%
037.41	Zinc, ICP, Dry ash (ppm)	16	16	206.0	17.27	204.6	15.94	4.981	7.79%	10.67	7.18%
037.42	Zinc, ICP, Open vessel (ppm)	16	15	205.6	14.02	206.0	14.52	4.688	7.05%	2.895	7.17%
037.31	Zinc, AAS, Dry ash (ppm)	11	11	203.5	17.75	203.4	14.22	5.359	6.99%	3.215	7.19%
037.53	Zinc, ICP-MS, Microwave (ppm)	4	4	206.4	14.37	206.4	14.37	7.184	6.96%	9.284	7.17%
037.99	Zinc, Miscellaneous (ppm)	4	4	210.2	14.80	210.2	14.80	7.398	7.04%	11.35	7.15%
037.44	Zinc, ICP, Dry ash (ppm)	1	1	190.0							
037.52	Zinc, ICP-MS, Open vessel (ppm)	1	1	203.5							
038.43	Molybdenum, ICP, Microwave (ppm)	8	7	1.016	0.2419	0.9765	0.1730	0.0817	17.71%	0.0201	16.05%
038.41	Molybdenum, ICP, Dry ash (ppm)	4	4	0.9698	0.2354	0.9698	0.2354	0.1177	24.28%	0.0180	16.07%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	4	4	0.9480	0.0702	0.9480	0.0702	0.0351	7.41%	0.0370	16.13%
038.42	Molybdenum, ICP, Open vessel (ppm)	4	3	0.8607	0.0927	0.8607	0.0927	0.0535	10.77%	0.1720	16.36%
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	1	1	0.9150							
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	7.648							
041.53	Vanadium, ICP-MS, Microwave (ppm)	2	2	0.4533	0.0329						
042.00	Chloride, Titrimetric (%)	2	2	0.8100	0.0000						

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042.01	Chloride, Ion-selective electrode (%)	2	2	0.7650	0.0919						
042.99	Chloride, Miscellaneous (%)	1	1	0.7350							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	1,880							
102.01	Niacin, Microbiological (ppm)	1	1	146.5							
102.02	Niacin, LC (ppm)	1	1	116.0							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	30.95							
103.02	Pantothenic Acid, LC (ppm)	1	1	30.28							
104.00	Riboflavin, Fluorometric (ppm)	1	1	17.35							
104.03	Riboflavin, LC (ppm)	1	1	16.15							
105.00	Thiamine, LC (ppm)	2	2	33.95	9.260						
105.01	Thiamine, Fluorometer (ppm)	1	1	24.75							
106.02	Vitamin A, LC (KU / kg)	14	14	16.37	4.069	16.44	3.580	1.196	21.77%	1.365	
106.00	Vitamin A, Color (KU / kg)	2	2	18.75	4.101						
106.01	Vitamin A, UV (KU / kg)	1	1	31.65							
107.00	Vitamin B12, Microbiological (ppb)	1	1	97.35							
108.02	Vitamin D3, LC (KU / kg)	2	1	1.355							
109.02	Vitamin E, LC (IU / kg)	16	15	179.4	54.33	184.8	48.96	15.80	26.49%	4.940	
111.00	Vitamin C, Phosphorylated, LC (ppm)	1		4.400							
112.01	Pyridoxine, LC (µg / g)	2	2	21.83	4.490						
113.01	Folic Acid, Micro (ppm)	1	1	2.400							
114.01	Biotin, Microbiological (ppm)	1	1	0.2180							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	1	1	0.3850							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	3.720							
120.00	Alanine, Post-col Ninhydrin Der (%)	16	15	1.614	0.0530	1.618	0.0501	0.0162	3.10%	0.0121	3.72%
120.05	Alanine, Pre-col AQC Der (%)	10	10	1.529	0.1322	1.543	0.1136	0.0449	7.36%	0.0216	3.75%
120.99	Alanine, Miscellaneous (%)	2	2	1.548	0.1945						
120.02	Alanine, Post-col OPA Der (%)	1	1	1.636							
121.00	Arginine, Post-col Ninhydrin Der (%)	16	16	1.219	0.1666	1.254	0.0717	0.0224	5.72%	0.0185	3.87%
121.05	Arginine, Pre-col AQC Der (%)	10	9	1.258	0.1201	1.258	0.1362	0.0568	10.83%	0.0037	3.86%
121.99	Arginine, Miscellaneous (%)	2	2	1.150	0.0919						
121.02	Arginine, Post-col OPA Der (%)	1	1	1.269							
122.00	Aspartic, Post-col Ninhydrin Der (%)	16	15	1.782	0.0489	1.782	0.0548	0.0177	3.07%	0.0136	3.67%
122.05	Aspartic, Pre-col AQC Der (%)	9	9	1.696	0.1196	1.700	0.1248	0.0520	7.34%	0.0296	3.69%
122.99	Aspartic, Miscellaneous (%)	2	2	1.675	0.1485						
122.01	Aspartic, Pre-col OPA Der (%)	1	1	1.285							
122.02	Aspartic, Post-col OPA Der (%)	1	1	1.753							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	18	18	0.3409	0.0316	0.3423	0.0328	0.0097	9.58%	0.0087	4.70%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	9	9	0.3263	0.0922	0.3153	0.0768	0.0320	24.35%	0.0182	4.76%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.3705							
124.99	Cysteine/Cystine, Miscellaneous (%)	1	1	0.3200							

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125.00	Glutamic, Post-col Ninhydrin Der (%)	16	15	3.950	0.1209	3.947	0.1320	0.0426	3.34%	0.0464	3.25%
125.05	Glutamic, Pre-col AQC Der (%)	10	10	3.595	0.5581	3.699	0.3331	0.1317	9.00%	0.0470	3.28%
125.99	Glutamic, Miscellaneous (%)	2	2	3.990	0.0707						
125.02	Glutamic, Post-col OPA Der (%)	1	1	3.844							
126.00	Glycine, Post-col Ninhydrin Der (%)	16	16	1.554	0.0639	1.550	0.0619	0.0194	4.00%	0.0181	3.74%
126.05	Glycine, Pre-col AQC Der (%)	10	10	1.527	0.1813	1.527	0.2056	0.0813	13.46%	0.0455	3.75%
126.99	Glycine, Miscellaneous (%)	2	2	1.035	0.7990						
126.02	Glycine, Post-col OPA Der (%)	1	1	1.571							
127.00	Histidine, Post-col Ninhydrin Der (%)	16	16	0.5232	0.0358	0.5249	0.0345	0.0108	6.57%	0.0091	4.41%
127.05	Histidine, Pre-col AQC Der (%)	10	10	0.5418	0.1211	0.5259	0.0955	0.0378	18.17%	0.0212	4.41%
127.99	Histidine, Miscellaneous (%)	2	2	0.5050	0.0495						
127.02	Histidine, Post-col OPA Der (%)	1	1	0.5155							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	16	16	0.8266	0.0785	0.8381	0.0613	0.0191	7.31%	0.0142	4.11%
128.05	Isoleucine, Pre-col AQC Der (%)	10	10	0.8136	0.1073	0.8136	0.1216	0.0481	14.95%	0.0210	4.13%
128.99	Isoleucine, Miscellaneous (%)	2	2	0.8250	0.0707						
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.8450							
129.00	Leucine, Post-col Ninhydrin Der (%)	16	15	2.314	0.0741	2.320	0.0690	0.0223	2.97%	0.0256	3.52%
129.05	Leucine, Pre-col AQC Der (%)	10	9	2.267	0.1474	2.265	0.1607	0.0670	7.10%	0.0297	3.54%
129.99	Leucine, Miscellaneous (%)	2	2	2.045	0.5303						
129.02	Leucine, Post-col OPA Der (%)	1	1	2.342							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	16	16	1.103	0.0441	1.104	0.0453	0.0142	4.10%	0.0120	3.94%
130.05	L-Lysine, Pre-col AQC Der (%)	10	9	0.9943	0.0874	0.9943	0.0991	0.0413	9.96%	0.0148	4.00%
130.99	L-Lysine, Miscellaneous (%)	2	2	1.173	0.0177						
130.02	L-Lysine, Post-col OPA Der (%)	1	1	1.083							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	18	18	0.4260	0.0353	0.4292	0.0318	0.0094	7.40%	0.0111	4.54%
131.05	Methionine, PAO Pre-col AQC Der (%)	9	9	0.4473	0.0444	0.4468	0.0492	0.0205	11.02%	0.0159	4.52%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.4155							
131.99	Methionine, Miscellaneous (%)	1	1	0.4900							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	16	16	1.074	0.0623	1.080	0.0524	0.0164	4.85%	0.0169	3.95%
132.05	Phenylalanine, Pre-col AQC Der (%)	10	10	1.091	0.1431	1.070	0.1066	0.0421	9.96%	0.0258	3.96%
132.99	Phenylalanine, Miscellaneous (%)	2	2	0.9750	0.1556						
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	1.072							
133.00	Proline, Post-col Ninhydrin Der (%)	16	15	1.758	0.1011	1.763	0.1014	0.0327	5.75%	0.0165	3.67%
133.05	Proline, Pre-col AQC Der (%)	10	9	1.696	0.1616	1.693	0.1766	0.0736	10.43%	0.0131	3.70%
133.99	Proline, Miscellaneous (%)	2	2	1.580	0.3253						
134.00	Serine, Post-col Ninhydrin Der (%)	16	16	1.084	0.0736	1.091	0.0619	0.0193	5.67%	0.0197	3.95%
134.05	Serine, Pre-col AQC Der (%)	9	9	1.043	0.0971	1.043	0.1101	0.0459	10.56%	0.0412	3.97%
134.99	Serine, Miscellaneous (%)	2	2	1.125	0.0566						
134.02	Serine, Post-col OPA Der (%)	1	1	0.9350							
135.00	Threonine, Post-col Ninhydrin Der (%)	16	16	0.8325	0.0302	0.8339	0.0309	0.0097	3.71%	0.0145	4.11%

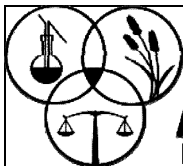
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135.05	Threonine, Pre-col AQC Der (%)	10	10	0.7977	0.0596	0.7977	0.0676	0.0267	8.47%	0.0184	4.14%
135.99	Threonine, Miscellaneous (%)	2	2	0.8275	0.0530						
135.02	Threonine, Post-col OPA Der (%)	1	1	0.8100							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	6	5	0.2059	0.0254	0.2059	0.0254	0.0039	12.31%	0.0015	5.07%
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	4	4	0.2340	0.0443	0.2340	0.0443	0.0221	18.92%	0.0051	4.98%
136.05	Tryptophan, Pre-col AQC Der (%)	4	3	0.1897	0.0960	0.1897	0.0960	0.0554	50.62%	0.0060	5.14%
136.99	Tryptophan, Miscellaneous (%)	2	2	0.4125	0.2652						
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	1	1	0.1980							
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.1845							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	13	13	0.7521	0.0702	0.7521	0.0796	0.0276	10.58%	0.0253	4.17%
137.05	Tyrosine, Pre-col AQC Der (%)	10	10	0.8104	0.0836	0.8087	0.0910	0.0360	11.25%	0.0348	4.13%
137.99	Tyrosine, Miscellaneous (%)	2	2	0.6300	0.0424						
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.8385							
138.00	Valine, Post-col Ninhydrin Der (%)	16	16	1.023	0.0801	1.038	0.0523	0.0163	5.04%	0.0158	3.98%
138.05	Valine, Pre-col AQC Der (%)	10	10	0.9868	0.1023	0.9868	0.1160	0.0459	11.76%	0.0193	4.01%
138.99	Valine, Miscellaneous (%)	2	2	0.9675	0.2227						
138.02	Valine, Post-col OPA Der (%)	1	1	1.046							
139.00	Taurine, Post-col Ninhydrin Der (%)	4	3	0.0635	0.0414	0.0635	0.0414	0.0239	65.24%	0.0023	6.06%
139.05	Taurine, Pre-col AQC Der (%)	3	3	0.0307	0.0253	0.0307	0.0253			0.0000	6.76%
139.99	Taurine, Miscellaneous (%)	2	2	0.0700	0.0141						
139.02	Taurine, Post-col OPA Der (%)	1	1	0.0395							
160.10	Fructose, HPAEC PAD (%)	1	1	0.9600							
160.99	Fructose, Miscellaneous (%)	1		0.1500							
161.10	Galactose, HPAEC PAD (%)	1		0.0000							
162.10	Glucose, HPAEC PAD (%)	1	1	0.5550							
162.99	Glucose, Miscellaneous (%)	1		0.1500							
163.10	Lactose, HPAEC PAD (%)	1		0.0000							
163.99	Lactose, Miscellaneous (%)	1		0.1500							
164.10	Maltose, HPAEC PAD (%)	1	1	0.0255							
164.99	Maltose, Miscellaneous (%)	1		0.1500							
165.10	Sucrose, HPAEC PAD (%)	1	1	1.299							
165.99	Sucrose, Miscellaneous (%)	1	1	1.470							
166.10	Raffinose, HPAEC PAD (%)	1	1	0.1330							
166.99	Raffinose, Miscellaneous (%)	1	1	0.1400							
167.10	Stachyose, HPAEC PAD (%)	1	1	0.3370							
167.99	Stachyose, Miscellaneous (%)	1	1	0.3850							
400.01	Water Activity, Aqualab chilled mirror (Units)	12	12	0.4763	0.0346	0.4732	0.0313	0.0113	6.62%	0.0041	
400.99	Water Activity, Miscellaneous (Units)	4	4	0.4700	0.0176	0.4700	0.0176	0.0088	3.73%	0.0015	
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	5	4	0.0640	0.0060	0.0640	0.0060	0.0030	9.42%	0.0035	22.00%
516.00	Arsenic, Total (As), AA, Hydride (ppm)	2	2	0.0628	0.0173						



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516.43	Arsenic, Total (As), ICP, Microwave (ppm)	3	1								
516.52	Arsenic, Total (As), ICP-MS, Open vessel (ppm)	1		0.0500							
518.53	Cadmium, ICP-MS, Microwave (ppm)	5	4	0.0249	0.0020	0.0249	0.0020	0.0010	7.87%	0.0010	22.00%
518.41	Cadmium, ICP, Dry ash (ppm)	2	2	0.0304	0.0147						
518.43	Cadmium, ICP, Microwave (ppm)	4	2	2.112	2.947	2.112	2.947			0.7062	14.29%
518.52	Cadmium, ICP-MS, Open vessel (ppm)	1		0.0500							
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	4	4	0.7683	0.3651	0.7683	0.3651	0.1826	47.52%	0.1004	16.64%
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	3	3	1.343	0.5636	1.343	0.5636	0.3254	41.96%	0.0294	15.30%
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	2	2	1.122	0.4911						
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	2	2	0.9885	0.0389						
520.52	Chromium, Total (Cr), ICP-MS, Open vessel (ppm)	1	1	0.4450							
526.53	Lead, ICP-MS, Microwave (ppm)	4	4	0.1380	0.0630	0.1380	0.0630	0.0315	45.70%	0.0081	21.55%
526.41	Lead, ICP, Dry ash (ppm)	2	2	0.1377	0.0245						
526.43	Lead, ICP, Microwave (ppm)	3	2	2.427	2.876	2.427	2.876			0.5097	14.00%
526.52	Lead, ICP-MS, Open vessel (ppm)	1	1	0.1200							
529.99	Mercury, Miscellaneous (ppb)	4	1								
539.43	Nickel, ICP, Microwave (ppm)	3	3	2.304	2.190	2.304	2.190	1.549	95.07%	1.196	14.11%
539.41	Nickel, ICP, Dry ash (ppm)	2	2	0.7939	0.0833						
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	0.9759	0.3477						
539.52	Nickel, ICP-MS, Open vessel (ppm)	1	1	0.8135							
702.00	Butyric Acid (4:0), Miscellaneous GC (%)	1		0.0200							
704.00	Caproic Acid (6:0) , Miscellaneous GC (%)	1		0.0200							
706.99	Caprylic acid (8:0), Miscellaneous (%) (w/w)	1		0.0200							
708.99	Capric acid (10:0), Miscellaneous (%) (w/w)	1		0.0200							
710.99	Lauric Acid (12:0), Miscellaneous (%) (w/w)	2	1	0.0099							
714.99	Myristic Acid (14:0) , Miscellaneous (%) (w/w)	3	3	0.1961	0.0251	0.1961	0.0251	0.0145	12.78%	0.0082	5.11%
716.99	Palmitic Acid (16:0), Miscellaneous (%) (w/w)	3	3	2.414	0.2729	2.414	0.2729	0.1576	11.31%	0.0443	3.50%
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (%) (w/w)	3	3	0.2462	0.0234	0.2462	0.0234	0.0135	9.51%	0.0106	4.94%
720.99	Margaric acid (17:0), Miscellaneous (%) (w/w)	2	2	0.0775	0.0177						
722.99	Stearic Acid (18:0), Miscellaneous (%) (w/w)	3	3	1.492	0.1001	1.492	0.1001	0.0578	6.71%	0.0325	3.77%
724.99	Oleic Acid (9c-18:1), Miscellaneous (%) (w/w)	3	3	3.474	0.2852	3.474	0.2852	0.1647	8.21%	0.0523	3.32%
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (%) (w/w)	5	4	1.765	0.2669	1.765	0.2669	0.1335	15.12%	0.0568	3.67%
726.02	Linoleic Acid (9c,12c-18:2), Direct Methylation by Acid-Alkali Hydrolysis & GC	1	1	1.355							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (%) (w/w)	3	3	0.0780	0.0243	0.0780	0.0243	0.0172	31.17%	0.0003	5.87%
730.99	Arachidic Acid (20:0), Miscellaneous (%) (w/w)	3	3	0.0213	0.0023	0.0213	0.0023	0.0016	10.83%	0.0006	7.14%
732.99	Gondoic Acid (11c-20:1), Miscellaneous (%) (w/w)	3	3	0.0315	0.0124	0.0315	0.0124	0.0087	39.18%	0.0000	6.73%
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (%) (w/w)	2	2	0.0250	0.0071						
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (%) (w/w)	2		0.0000							
742.99	Behenic Acid (22:0), Miscellaneous (%) (w/w)	3	2	0.0100	0.0000	0.0100	0.0000			0.0007	8.00%
744.99	Erucic Acid (13c-22:1), Miscellaneous (%) (w/w)	2		0.0050							

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
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (%)	2		0.0050							
748.99	Lignoceric Acid (24:0), Miscellaneous (%) (w/w)	3	2	0.0108	0.0011	0.0108	0.0011			0.0001	7.91%
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (%)	2		0.0000							
752.99	Nervonic Acid (24:1) isomers, Miscellaneous (%) (w/w)	2		0.0050							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (%) (w/w)	2	2	0.0750	0.0354						
754.02	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Direct Methylation by Acid- <i>F</i>	1	1	0.0773							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (%) (w/w)	2	2	1.620	0.3253						
756.01	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Direct Methylation by Alkali	1	1	1.390							
758.99	Total Saturated Fatty Acids, Miscellaneous (%) (w/w)	1	1	4.655							
764.99	Total cis Monounsaturated Fatty Acids, Miscellaneous (%) (w/w)	1	1	4.305							
768.99	Total cis Polyunsaturated Fatty Acids, Miscellaneous (%) (w/w)	1	1	2.125							
770.99	Total Fat (equivalent to NLEA), Miscellaneous (%) (w/w)	1	1	11.34							
772.99	Total Fatty Acids, Miscellaneous (%) (w/w)	2	2	10.52	0.4490						

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.



**Animal Feed Scheme**

**Dry Dog Feed**

**Test Material Code # 202125**

**# Methods Reported: 131**

**# Labs Reporting: 203**

**Issue Date : 06/30/2021**

**Method Precision Report**

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 (%)	59	54	7.458	0.2747	0.1977	0.0829	0.2144	2.66%	1.12%	2.89%	2.586
001.99	Loss on Drying, Miscellaneous (%)	23	20	7.165	0.7405	0.5706	0.0951	0.5784	7.86%	1.31%	7.96%	6.085
002.01	Protein, Crude, Auto Kjel-Foss (%)	17	15	23.38	0.3253	0.2014	0.1408	0.2457	0.86%	0.60%	1.05%	1.745
002.05	Protein, Crude, Copper, Boric Acid (%)	31	28	23.34	0.3481	0.2934	0.0938	0.3080	1.26%	0.40%	1.32%	3.284
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	144	134	23.64	0.4192	0.3196	0.1894	0.3715	1.35%	0.80%	1.57%	1.961
002.11	Protein, Crude, NIR (%)	6	5	22.71	1.020	0.3164	0.1007	0.3321	1.37%	0.44%	1.44%	3.296
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	18	18	9.915	1.729	1.723	0.1987	1.735	17.38%	2.00%	17.50%	8.729
003.06	Fat, Crude, Pet Ether (%)	17	15	8.564	1.080	0.7271	0.1403	0.7405	8.67%	1.67%	8.83%	5.277
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	12	11	8.972	1.053	0.4224	0.2877	0.5111	4.86%	3.31%	5.88%	1.776
003.10	Fat, Crude, Randall, Pet Ether (%)	28	25	8.803	0.8063	0.4802	0.0869	0.4880	5.53%	1.00%	5.62%	5.617
003.11	Fat, Crude, NIR (%)	7	6	11.72	1.429	1.452	0.1506	1.460	12.18%	1.26%	12.25%	9.690
003.13	Fat, Crude, Randall, Hexane Ext. (%)	6	5	8.864	0.4760	0.4747	0.0494	0.4772	5.36%	0.56%	5.38%	9.661
003.14	Fat, Crude, Ankom (%)	40	36	8.331	0.7734	0.3640	0.1155	0.3819	4.38%	1.39%	4.60%	3.305
004.00	Fiber, Crude, Asbestos Free (%)	16	14	2.094	0.4305	0.2588	0.1396	0.2941	12.90%	6.96%	14.65%	2.106
004.06	Fiber, Crude, Fibertec (%)	17	16	2.028	0.6673	0.2270	0.1258	0.2595	12.10%	6.70%	13.83%	2.063
004.07	Fiber, Crude, ANKOM (%)	71	68	2.103	1.086	0.6131	0.1408	0.6291	31.54%	7.24%	32.36%	4.467
005.00	Ash, 2h @ 600°C (%)	103	94	6.479	0.1212	0.0943	0.0577	0.1105	1.45%	0.89%	1.70%	1.916
005.05	Ash, 3h @ 550°C (%)	24	22	6.499	0.0979	0.0631	0.0803	0.1021	0.97%	1.23%	1.57%	1.272
005.99	Ash, Miscellaneous (%)	9	9	6.392	0.2472	0.2368	0.1004	0.2572	3.70%	1.57%	4.02%	2.561
008.02	Fiber, Acid Detergent, Crucible (%)	12	12	3.469	0.6234	0.6126	0.1631	0.6339	17.66%	4.70%	18.28%	3.887
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	41	37	4.134	1.487	1.442	0.2209	1.459	35.91%	5.50%	36.33%	6.605
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	12	12	10.09	2.498	2.487	0.3392	2.510	24.65%	3.36%	24.88%	7.399
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	38	34	10.80	2.929	2.082	0.4148	2.123	20.25%	4.03%	20.65%	5.118
010.11	Moisture, NIR (%)	6	6	7.444	0.5497	0.5335	0.1870	0.5653	7.17%	2.51%	7.59%	3.023
010.99	Moisture, Miscellaneous (%)	15	13	7.850	1.644	0.5912	0.0639	0.5946	7.94%	0.86%	7.99%	9.313
011.01	Loss on Drying, HT, 135°C 2hr (%)	77	72	7.946	0.5713	0.2992	0.0648	0.3062	3.73%	0.81%	3.82%	4.724
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	5	5	7.654	0.3148	0.2892	0.1758	0.3384	3.78%	2.30%	4.42%	1.925
012.00	Starch, Polarimetric (Ewers) (%)	10	10	40.12	0.9148	0.9015	0.2198	0.9279	2.25%	0.55%	2.31%	4.222
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	9	7	37.99	4.671	2.234	0.4736	2.283	5.68%	1.20%	5.81%	4.822
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	31	29	11.83	0.7677	0.5308	0.2555	0.5890	4.45%	2.14%	4.94%	2.306
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	26	24	12.06	0.7530	0.5881	0.1796	0.6149	4.84%	1.48%	5.06%	3.425
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	9	8	11.58	0.4817	0.4601	0.2017	0.5024	3.97%	1.74%	4.34%	2.490
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	17	16	11.98	0.7025	0.6796	0.2516	0.7247	5.67%	2.10%	6.05%	2.880
015.41	Aluminum, ICP, Dry ash (ppm)	7	6	69.45	13.17	13.16	0.5289	13.17	18.96%	0.76%	18.97%	24.91
015.43	Aluminum, ICP, Microwave (ppm)	8	8	82.68	16.06	15.71	4.731	16.41	19.00%	5.72%	19.85%	3.468
017.41	Boron, ICP, Dry ash (ppm)	6	6	4.536	0.5722	0.2504	0.7276	0.7694	5.52%	16.04%	16.96%	1.058

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
017.42	Boron, ICP, Open vessel (ppm)	6	5	4.046	1.453	1.450	0.1343	1.456	35.83%	3.32%	35.99%	10.85
017.43	Boron, ICP, Microwave (ppm)	7	5	4.605	0.3361	0.3291	0.0963	0.3429	7.15%	2.09%	7.45%	3.561
019.00	Calcium, Ox-Mn04 Vol. (%)	7	7	1.340	0.1028	0.1011	0.0265	0.1045	7.54%	1.97%	7.80%	3.949
019.08	Calcium, EDTA (%)	12	10	1.372	0.1010	0.0833	0.0123	0.0842	6.16%	0.91%	6.23%	6.829
019.31	Calcium, AAS, Dry ash (%)	22	19	1.353	0.0879	0.0866	0.0231	0.0896	6.38%	1.70%	6.60%	3.880
019.41	Calcium, ICP, Dry ash (%)	27	24	1.363	0.0727	0.0495	0.0191	0.0531	3.66%	1.41%	3.92%	2.773
019.42	Calcium, ICP, Open vessel (%)	19	19	1.377	0.1036	0.0954	0.0569	0.1111	6.93%	4.13%	8.07%	1.953
019.43	Calcium, ICP, Microwave (%)	32	32	1.348	0.0856	0.0811	0.0388	0.0899	6.01%	2.88%	6.67%	2.314
019.44	Calcium, ICP, Dry ash (%)	12	11	1.324	0.0703	0.0293	0.0408	0.0502	2.24%	3.12%	3.84%	1.232
019.53	Calcium, ICP-MS, Microwave (%)	7	7	1.300	0.0368		0.0625			4.81%		
019.99	Calcium, Miscellaneous (%)	6	5	1.250	0.1578	0.0385	0.0517	0.0644	2.94%	3.94%	4.92%	1.247
021.43	Cobalt, ICP, Microwave (ppm)	8	6	2.242	2.123	1.874	1.411	2.346	83.59%	62.94%	104.64%	1.663
022.31	Copper, AAS, Dry ash (ppm)	10	8	20.30	14.89	4.812	1.438	5.022	30.88%	9.23%	32.23%	3.494
022.41	Copper, ICP, Dry ash (ppm)	16	14	14.21	2.200	1.582	0.6031	1.694	11.45%	4.36%	12.26%	2.808
022.42	Copper, ICP, Open vessel (ppm)	17	15	13.56	0.7643	0.7539	0.2927	0.8088	5.57%	2.16%	5.98%	2.763
022.43	Copper, ICP, Microwave (ppm)	21	18	13.48	1.149	0.5891	0.5317	0.7936	4.38%	3.95%	5.90%	1.493
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	13.44	0.9465	0.6470	0.9770	1.172	4.81%	7.27%	8.72%	1.199
025.31	Iron, AAS, Dry ash (ppm)	12	11	200.1	16.52	16.78	3.537	17.15	8.34%	1.76%	8.53%	4.847
025.41	Iron, ICP, Dry ash (ppm)	17	16	214.4	26.68	13.39	5.990	14.67	6.41%	2.87%	7.03%	2.450
025.42	Iron, ICP, Open vessel (ppm)	14	14	202.4	10.27	9.519	5.461	10.97	4.70%	2.70%	5.42%	2.009
025.43	Iron, ICP, Microwave (ppm)	22	19	216.6	23.04	16.51	4.489	17.11	7.76%	2.11%	8.04%	3.811
027.31	Magnesium, AAS, Dry ash (%)	8	7	0.1161	0.0097	0.0054	0.0021	0.0058	4.57%	1.78%	4.91%	2.755
027.41	Magnesium, ICP, Dry ash (%)	19	18	0.1147	0.0074	0.0070	0.0032	0.0077	6.09%	2.78%	6.70%	2.407
027.42	Magnesium, ICP, Open vessel (%)	17	17	0.1162	0.0073	0.0069	0.0033	0.0077	5.98%	2.82%	6.61%	2.346
027.43	Magnesium, ICP, Microwave (%)	23	22	0.1104	0.0133	0.0071	0.0042	0.0083	6.30%	3.76%	7.34%	1.951
027.44	Magnesium, ICP, Dry ash (%)	10	10	0.1146	0.0031		0.0048			4.18%		
028.31	Manganese, AAS, Dry ash (ppm)	11	10	51.06	5.570	2.996	1.631	3.411	5.71%	3.11%	6.50%	2.092
028.41	Manganese, ICP, Dry ash (ppm)	17	15	55.70	4.869	4.238	1.305	4.434	7.69%	2.37%	8.05%	3.398
028.42	Manganese, ICP, Open vessel (ppm)	17	16	55.55	5.629	5.293	2.056	5.678	9.61%	3.73%	10.31%	2.762
028.43	Manganese, ICP, Microwave (ppm)	20	18	54.00	3.445	3.453	1.055	3.611	6.39%	1.95%	6.68%	3.421
028.53	Manganese, ICP-MS, Microwave (ppm)	5	5	56.85	1.636		6.528			11.48%		
031.01	Phosphorus, Photometric (%)	37	34	0.8826	0.0557	0.0349	0.0129	0.0372	3.93%	1.45%	4.19%	2.884
031.41	Phosphorus, ICP, Dry ash (%)	28	28	0.9105	0.0474	0.0459	0.0167	0.0489	5.04%	1.83%	5.37%	2.926
031.42	Phosphorus, ICP, Open vessel (%)	21	18	0.8926	0.0625	0.0602	0.0115	0.0612	6.80%	1.29%	6.92%	5.348
031.43	Phosphorus, ICP, Microwave (%)	32	31	0.9116	0.0435	0.0358	0.0281	0.0456	3.95%	3.09%	5.01%	1.620
031.44	Phosphorus, ICP, Dry ash (%)	11	11	0.8784	0.0242	0.0133	0.0286	0.0315	1.51%	3.25%	3.59%	1.102
031.53	Phosphorus, ICP-MS, Microwave (%)	7	7	0.8649	0.0450	0.0263	0.0516	0.0579	3.04%	5.96%	6.69%	1.123
032.31	Potassium, AAS, Dry ash (%)	10	9	0.6579	0.0438	0.0461	0.0068	0.0466	7.01%	1.03%	7.09%	6.870
032.41	Potassium, ICP, Dry ash (%)	20	20	0.6914	0.0361	0.0345	0.0151	0.0376	4.99%	2.18%	5.44%	2.498
032.42	Potassium, ICP, Open vessel (%)	15	15	0.6989	0.0386	0.0377	0.0119	0.0395	5.39%	1.71%	5.66%	3.315
032.43	Potassium, ICP, Microwave (%)	23	21	0.6973	0.0305	0.0297	0.0104	0.0315	4.27%	1.50%	4.52%	3.022
032.44	Potassium, ICP, Dry ash (%)	10	9	0.6773	0.0259		0.0282			4.13%		
033.00	Salt as chloride, Sol Cl (%)	15	14	1.190	0.1875	0.0953	0.0653	0.1155	7.75%	5.31%	9.39%	1.770
033.01	Salt as chloride, Poten Cl (%)	21	18	1.249	0.1926	0.0277	0.0103	0.0296	2.12%	0.79%	2.26%	2.860
033.99	Salt, Miscellaneous (%)	6	6	1.192	0.1854	0.1843	0.0286	0.1865	15.46%	2.40%	15.65%	6.525
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	6	5	0.3729	0.1715	0.0598	0.0154	0.0618	19.52%	5.01%	20.15%	4.023

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
035.31	Sodium, AAS, Dry ash (%)	12	11	0.4454	0.0222	0.0226	0.0044	0.0230	5.06%	0.97%	5.15%	5.288
035.41	Sodium, ICP, Dry ash (%)	30	28	0.4520	0.0211	0.0122	0.0160	0.0201	2.71%	3.56%	4.48%	1.258
035.42	Sodium, ICP, Open vessel (%)	16	14	0.4505	0.0360	0.0277	0.0070	0.0286	6.09%	1.53%	6.28%	4.107
035.43	Sodium, ICP, Microwave (%)	24	22	0.4512	0.0274	0.0175	0.0054	0.0183	3.94%	1.21%	4.12%	3.418
035.53	Sodium, ICP-MS, Microwave (%)	5	5	0.4495	0.0177	0.0167	0.0085	0.0187	3.71%	1.88%	4.16%	2.211
036.42	Sulfur, ICP, Open vessel (%)	19	18	0.3267	0.0257	0.0205	0.0098	0.0227	6.33%	3.02%	7.02%	2.322
036.43	Sulfur, ICP, Microwave (%)	17	17	0.3410	0.0137	0.0124	0.0081	0.0148	3.64%	2.37%	4.34%	1.836
037.31	Zinc, AAS, Dry ash (ppm)	11	10	203.5	17.75	18.32	2.646	18.51	9.04%	1.31%	9.14%	6.995
037.41	Zinc, ICP, Dry ash (ppm)	16	15	206.0	17.27	11.60	8.658	14.47	5.71%	4.26%	7.13%	1.671
037.42	Zinc, ICP, Open vessel (ppm)	16	15	205.6	14.02	13.91	2.449	14.12	6.77%	1.19%	6.87%	5.768
037.43	Zinc, ICP, Microwave (ppm)	22	20	207.8	10.79	6.517	4.410	7.869	3.16%	2.14%	3.82%	1.784
038.43	Molybdenum, ICP, Microwave (ppm)	8	6	1.016	0.2419	0.1097	0.0193	0.1113	11.75%	2.07%	11.93%	5.770
106.02	Vitamin A, LC (KU / kg)	14	14	16.37	4.069	3.976	1.225	4.160	24.29%	7.49%	25.42%	3.395
109.02	Vitamin E, LC (IU / kg)	16	15	179.4	54.33	54.24	4.249	54.41	30.24%	2.37%	30.34%	12.81
120.00	Alanine, Post-col Ninhydrin Der (%)	16	15	1.614	0.0530	0.0524	0.0115	0.0537	3.25%	0.71%	3.32%	4.676
120.05	Alanine, Pre-col AQC Der (%)	10	9	1.529	0.1322	0.0839	0.0215	0.0866	5.37%	1.38%	5.54%	4.020
121.00	Arginine, Post-col Ninhydrin Der (%)	16	15	1.219	0.1666	0.0915	0.0172	0.0931	7.30%	1.37%	7.43%	5.410
121.05	Arginine, Pre-col AQC Der (%)	10	8	1.258	0.1201	0.1217	0.0026	0.1217	9.78%	0.21%	9.78%	46.63
122.00	Aspartic, Post-col Ninhydrin Der (%)	16	14	1.782	0.0489	0.0499	0.0116	0.0512	2.80%	0.65%	2.87%	4.415
122.05	Aspartic, Pre-col AQC Der (%)	9	8	1.696	0.1196	0.1264	0.0186	0.1278	7.44%	1.09%	7.52%	6.875
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	18	17	0.3409	0.0316	0.0308	0.0073	0.0317	8.99%	2.13%	9.24%	4.328
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	9	8	0.3263	0.0922	0.0541	0.0188	0.0573	17.99%	6.25%	19.05%	3.046
125.00	Glutamic, Post-col Ninhydrin Der (%)	16	15	3.950	0.1209	0.1169	0.0434	0.1247	2.96%	1.10%	3.16%	2.873
125.05	Glutamic, Pre-col AQC Der (%)	10	9	3.595	0.5581	0.2473	0.0501	0.2523	6.58%	1.33%	6.72%	5.040
126.00	Glycine, Post-col Ninhydrin Der (%)	16	15	1.554	0.0639	0.0492	0.0154	0.0516	3.19%	1.00%	3.34%	3.345
126.05	Glycine, Pre-col AQC Der (%)	10	10	1.527	0.1813	0.1774	0.0529	0.1851	11.62%	3.47%	12.12%	3.497
127.00	Histidine, Post-col Ninhydrin Der (%)	16	14	0.5232	0.0358	0.0295	0.0073	0.0304	5.58%	1.38%	5.75%	4.156
127.05	Histidine, Pre-col AQC Der (%)	10	8	0.5418	0.1211	0.0580	0.0146	0.0598	11.73%	2.96%	12.09%	4.089
128.00	Isoleucine, Post-col Ninhydrin Der (%)	16	15	0.8266	0.0785	0.0591	0.0132	0.0606	7.04%	1.57%	7.21%	4.590
128.05	Isoleucine, Pre-col AQC Der (%)	10	9	0.8136	0.1073	0.0940	0.0182	0.0957	11.29%	2.19%	11.50%	5.261
129.00	Leucine, Post-col Ninhydrin Der (%)	16	14	2.314	0.0741	0.0530	0.0244	0.0583	2.28%	1.05%	2.51%	2.395
129.05	Leucine, Pre-col AQC Der (%)	10	8	2.267	0.1474	0.1410	0.0180	0.1422	6.16%	0.79%	6.21%	7.910
130.00	L-Lysine, Post-col Ninhydrin Der (%)	16	15	1.103	0.0441	0.0450	0.0100	0.0461	4.08%	0.90%	4.18%	4.631
130.05	L-Lysine, Pre-col AQC Der (%)	10	9	0.9943	0.0874	0.0866	0.0165	0.0881	8.71%	1.66%	8.86%	5.337
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	18	17	0.4260	0.0353	0.0282	0.0092	0.0296	6.53%	2.14%	6.87%	3.206
131.05	Methionine, PAO Pre-col AQC Der (%)	9	9	0.4473	0.0444	0.0429	0.0159	0.0457	9.59%	3.54%	10.23%	2.885
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	16	15	1.074	0.0623	0.0419	0.0140	0.0442	3.86%	1.29%	4.07%	3.146
132.05	Phenylalanine, Pre-col AQC Der (%)	10	9	1.091	0.1431	0.0773	0.0290	0.0825	7.34%	2.75%	7.84%	2.849
133.00	Proline, Post-col Ninhydrin Der (%)	16	15	1.758	0.1011	0.1004	0.0165	0.1018	5.71%	0.94%	5.79%	6.169
133.05	Proline, Pre-col AQC Der (%)	10	9	1.696	0.1616	0.1613	0.0128	0.1618	9.51%	0.75%	9.54%	12.64
134.00	Serine, Post-col Ninhydrin Der (%)	16	15	1.084	0.0736	0.0717	0.0157	0.0734	6.65%	1.45%	6.80%	4.686
134.05	Serine, Pre-col AQC Der (%)	9	9	1.043	0.0971	0.0927	0.0406	0.1012	8.89%	3.90%	9.71%	2.491
135.00	Threonine, Post-col Ninhydrin Der (%)	16	15	0.8325	0.0302	0.0302	0.0110	0.0321	3.63%	1.32%	3.86%	2.925
135.05	Threonine, Pre-col AQC Der (%)	10	9	0.7977	0.0596	0.0606	0.0125	0.0618	7.64%	1.58%	7.80%	4.945
137.00	Tyrosine, Post-col Ninhydrin Der (%)	13	13	0.7521	0.0702	0.0680	0.0243	0.0722	9.04%	3.23%	9.60%	2.974
137.05	Tyrosine, Pre-col AQC Der (%)	10	10	0.8104	0.0836	0.0803	0.0330	0.0868	9.91%	4.08%	10.71%	2.628

**Test Material Code # 202125**

**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
138.00	Valine, Post-col Ninhydrin Der (%)	16	15	1.023	0.0801	0.0520	0.0145	0.0540	5.01%	1.40%	5.20%	3.716
138.05	Valine, Pre-col AQC Der (%)	10	9	0.9868	0.1023	0.0993	0.0162	0.1006	10.20%	1.66%	10.33%	6.224
400.01	Water Activity, Aqualab chilled mirror (Units)	12	10	0.4763	0.0346	0.0256	0.0030	0.0258	5.45%	0.63%	5.48%	8.671

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