



Animal Feed Scheme
Beef feed, Medicated
Test Material Code # 202131

Method Summary Report

(Precision Report Follows)

Labs Reporting: 166
Methods Reported: 373
Issue Date : 12/31/2021

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 (%)	3	3	4.102	2.038	4.102	2.038	1.177	49.68%	0.1567	3.23%
000.99	Urea, Miscellaneous (%)	2	2	1.910	0.3536						
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	44	43	10.99	0.4629	11.03	0.4207	0.0802	3.81%	0.0888	2.79%
001.99	Loss on Drying, Miscellaneous (%)	15	14	10.93	0.6192	11.03	0.4663	0.1558	4.23%	0.0596	2.79%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	4	4	11.33	0.0844	11.33	0.0844	0.0422	0.75%	0.1068	2.78%
001.03	Loss on Drying, Low temp. methods (%)	2	2	11.50	0.0636						
001.05	Loss on Drying, LECO (%)	1	1	11.15							
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	106	105	19.75	0.5309	19.72	0.4433	0.0541	2.25%	0.2729	2.25%
002.05	Protein, Crude, Copper, Boric Acid (%)	27	26	19.32	0.3957	19.30	0.3864	0.0947	2.00%	0.2125	2.28%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	16	16	19.54	0.4457	19.50	0.2660	0.0831	1.36%	0.2181	2.26%
002.11	Protein, Crude, NIR (%)	6	6	19.35	2.199	19.35	2.493	1.272	12.89%	0.2683	2.27%
002.00	Protein, Crude, Crude (%)	2	2	19.69	0.0884						
002.04	Protein, Crude, Copper Catalyst (%)	2	2	19.46	0.3430						
002.08	Protein, Crude, Cu/Ti (%)	2	2	19.78	0.2295						
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	1	1	20.72							
002.03	Protein, Crude, Hach Method (%)	1	1	21.39							
002.99	Protein, Crude, Miscellaneous (%)	1	1	19.88							
003.14	Fat, Crude, Ankom (%)	46	45	4.458	0.3139	4.455	0.3258	0.0607	7.31%	0.1320	3.19%
003.10	Fat, Crude, Randall, Pet Ether (%)	25	24	4.397	0.1849	4.411	0.1691	0.0431	3.83%	0.0676	3.20%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	14	14	4.494	0.4085	4.523	0.3998	0.1336	8.84%	0.2066	3.19%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	13	13	4.523	0.1982	4.522	0.2224	0.0771	4.92%	0.0700	3.19%
003.06	Fat, Crude, Pet Ether (%)	12	12	4.598	0.2058	4.598	0.2333	0.0842	5.07%	0.0909	3.18%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	7	7	4.520	0.1030	4.509	0.0908	0.0429	2.01%	0.1105	3.19%
003.11	Fat, Crude, NIR (%)	5	5	4.457	0.6188	4.457	0.6188	0.2767	13.88%	0.0580	3.19%
003.12	Fat, Crude, Hexane Ext (%)	5	5	5.190	0.7067	5.190	0.7067	0.3161	13.62%	0.1760	3.12%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	3	3	4.364	0.7523	4.364	0.7523	0.4343	17.24%	0.2153	3.20%
003.99	Fat, Crude, Miscellaneous (%)	2	2	3.780	0.0283						
004.07	Fiber, Crude, ANKOM (%)	66	65	10.25	1.194	10.24	0.8567	0.1328	8.37%	0.3120	2.82%
004.06	Fiber, Crude, Fibertec (%)	19	18	10.04	0.5707	10.04	0.6450	0.1900	6.43%	0.2325	2.83%

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
004.00	Fiber, Crude, Asbestos Free (%)	11	11	10.26	0.5252	10.26	0.5956	0.2245	5.80%	0.1583	2.82%
004.03	Fiber, Crude, Fritted Glass (%)	6	6	9.518	0.9170	9.365	0.6606	0.3371	7.05%	0.4750	2.86%
004.11	Fiber, Crude, NIR (%)	6	6	9.113	3.098	8.918	3.050	1.556	34.20%	0.2083	2.88%
004.99	Fiber, Crude, Miscellaneous (%)	1	1	8.590							
005.00	Ash, 2h @ 600°C (%)	81	80	8.256	0.3279	8.266	0.3370	0.0471	4.08%	0.1443	2.91%
005.05	Ash, 3h @ 550°C (%)	27	26	8.534	0.3183	8.545	0.2856	0.0700	3.34%	0.1383	2.90%
005.99	Ash, Miscellaneous (%)	9	9	8.251	0.5787	8.251	0.6562	0.2734	7.95%	0.1634	2.91%
005.11	Ash, NIR (%)	4	3	10.11	2.109	10.11	2.109	1.218	20.87%	0.0900	2.82%
005.02	Ash, LECO (%)	1	1	8.580							
006.99	Total Sugars, Miscellaneous (%)	7	6	5.772	0.8386	5.772	0.9510	0.4853	16.48%	0.1023	3.07%
006.00	Total Sugars, As sucrose (%)	4	4	6.636	0.2481	6.636	0.2481	0.1241	3.74%	0.2058	3.01%
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	40	40	13.71	1.101	13.66	0.8246	0.1630	6.04%	0.3072	2.70%
008.02	Fiber, Acid Detergent, Crucible (%)	13	13	13.66	0.6580	13.68	0.6978	0.2419	5.10%	0.4123	2.70%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	4	4	13.46	2.656	13.46	2.656	1.328	19.73%	0.4755	2.70%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	14.45							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	40	40	21.02	1.508	20.84	0.8468	0.1674	4.06%	0.3426	2.19%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	12	12	21.58	1.088	21.60	1.196	0.4315	5.54%	0.7250	2.15%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	3	3	22.40	0.1415	22.40	0.1415	0.0817	0.63%	0.3500	2.11%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	21.27							
010.99	Moisture, Miscellaneous (%)	16	15	10.81	0.8328	10.92	0.5588	0.1804	5.12%	0.0960	2.79%
010.11	Moisture, NIR (%)	5	4	10.35	0.9635	10.35	0.9635	0.4817	9.31%	0.0475	2.81%
010.03	Moisture, Karl-Fischer (%)	2	2	9.648	0.4207						
011.01	Loss on Drying, HT, 135°C 2hr (%)	60	59	12.33	0.4124	12.33	0.3937	0.0641	3.19%	0.1294	2.74%
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	4	4	11.61	0.5682	11.61	0.5682	0.2841	4.90%	0.1648	2.77%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	2	2	12.23	0.5586						
012.00	Starch, Polarimetric (Ewers) (%)	16	15	27.23	0.6634	27.23	0.7440	0.2401	2.73%	0.1423	1.92%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	12	12	27.68	3.512	27.04	2.027	0.7315	7.50%	0.9381	1.92%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	6	6	27.26	0.8548	27.26	0.9693	0.4946	3.56%	0.5667	1.92%
012.11	Starch, NIR (%)	3	3	22.16	6.971	22.16	6.971	4.025	31.46%	0.1833	2.12%
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	24.96							
013.02	Fat, Acid Pretreat, Mojonier, Bak Ext (%)	16	15	5.576	0.2496	5.602	0.2125	0.0686	3.79%	0.1776	3.09%
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	15	14	5.404	0.6181	5.403	0.7009	0.2342	12.97%	0.1071	3.10%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	7	7	5.366	0.4889	5.379	0.5239	0.2475	9.74%	0.1669	3.10%
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	7	6	4.981	0.2921	4.981	0.3312	0.1690	6.65%	0.0314	3.14%
013.12	Fat, Acid Pretreat, NIR- Acid Hydrolysis (%)	1	1	4.200							
015.43	Aluminum, ICP, Microwave (ppm)	6	6	185.8	25.86	180.1	14.78	7.541	8.21%	4.405	7.32%
015.41	Aluminum, ICP, Dry ash (ppm)	3	3	181.7	11.09	181.7	11.09			6.083	7.31%
015.42	Aluminum, ICP, Open vessel (ppm)	2	2	198.9	127.3						
015.53	Aluminum, ICP-MS, Microwave (ppm)	2	2	196.5	20.51						
017.42	Boron, ICP, Open vessel (ppm)	5	5	10.82	1.065	10.82	1.065	0.4763	9.84%	0.4602	11.18%

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
017.43	Boron, ICP, Microwave (ppm)	5	5	11.96	1.581	11.96	1.581	0.7069	13.21%	0.3500	11.01%
017.41	Boron, ICP, Dry ash (ppm)	3	3	10.25	0.8917	10.25	0.8917	0.5148	8.70%	0.2467	11.27%
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	12.95							
019.43	Calcium, ICP, Microwave (%)	29	27	1.741	0.1446	1.724	0.0761	0.0183	4.42%	0.0451	3.68%
019.41	Calcium, ICP, Dry ash (%)	21	21	1.705	0.0858	1.705	0.0961	0.0262	5.64%	0.0544	3.69%
019.31	Calcium, AAS, Dry ash (%)	19	19	1.711	0.1183	1.713	0.1302	0.0373	7.60%	0.0781	3.69%
019.42	Calcium, ICP, Open vessel (%)	17	16	1.718	0.1387	1.715	0.1421	0.0444	8.29%	0.0515	3.69%
019.08	Calcium, EDTA (%)	12	11	1.711	0.0975	1.718	0.0941	0.0355	5.48%	0.0350	3.69%
019.00	Calcium, Ox-Mn04 Vol. (%)	5	5	1.677	0.1507	1.677	0.1507	0.0674	8.98%	0.0694	3.70%
019.99	Calcium, Miscellaneous (%)	5	5	1.659	0.0411	1.659	0.0411	0.0184	2.48%	0.0620	3.71%
019.53	Calcium, ICP-MS, Microwave (%)	3	3	1.732	0.0454	1.732	0.0454	0.0262	2.62%	0.0900	3.68%
019.02	Calcium, Hach Method (%)	1	1	1.910							
019.09	Calcium, Ion-selective electrode (%)	1	1	1.339							
019.32	Calcium, AAS, Open vessel (%)	1	1	1.820							
019.33	Calcium, AAS, Microwave (%)	1	1	1.630							
019.44	Calcium, ICP, Dry ash (%)	1	1	1.495							
019.52	Calcium, ICP-MS, Open vessel (%)	1	1	1.490							
021.43	Cobalt, ICP, Microwave (ppm)	9	9	4.830	1.539	4.693	1.411	0.5877	30.06%	0.2082	12.68%
021.41	Cobalt, ICP, Dry ash (ppm)	5	5	4.400	1.250	4.400	1.250	0.5590	28.40%	0.1756	12.80%
021.53	Cobalt, ICP-MS, Microwave (ppm)	4	4	4.747	0.6768	4.747	0.6768	0.3384	14.26%	0.1618	12.65%
021.52	Cobalt, ICP-MS, Open vessel (ppm)	2	2	3.383	0.1803						
021.31	Cobalt, AAS, Dry ash (ppm)	1	1	5.829							
021.42	Cobalt, ICP, Open vessel (ppm)	1	1	4.160							
022.43	Copper, ICP, Microwave (ppm)	26	25	42.53	4.281	42.29	4.253	1.063	10.06%	1.506	9.11%
022.42	Copper, ICP, Open vessel (ppm)	18	18	43.50	3.165	43.45	3.484	1.027	8.02%	1.636	9.07%
022.41	Copper, ICP, Dry ash (ppm)	17	17	39.80	4.257	39.31	3.198	0.9696	8.14%	1.080	9.21%
022.31	Copper, AAS, Dry ash (ppm)	9	9	42.50	4.900	42.52	5.512	2.297	12.96%	1.579	9.10%
022.99	Copper, Miscellaneous (ppm)	4	4	39.89	2.118	39.89	2.118	1.059	5.31%	1.725	9.19%
022.53	Copper, ICP-MS, Microwave (ppm)	3	3	40.68	1.008	40.68	1.008	0.5820	2.48%	3.487	9.16%
022.33	Copper, AAS, Microwave (ppm)	2	2	38.59	2.920						
022.44	Copper, ICP, Dry ash (ppm)	2	2	48.12	9.359						
022.32	Copper, AAS, Open vessel (ppm)	1	1	52.80							
022.52	Copper, ICP-MS, Open vessel (ppm)	1	1	65.91							
024.03	Iodine, Ion-selective electrode (ppm)	1	1	39.88							
024.53	Iodine, ICP-MS, Microwave (ppm)	1	1	6.995							
025.43	Iron, ICP, Microwave (ppm)	23	23	320.9	50.21	313.5	36.29	9.460	11.58%	9.467	6.74%
025.41	Iron, ICP, Dry ash (ppm)	16	16	304.9	35.52	309.1	26.67	8.336	8.63%	8.508	6.75%
025.42	Iron, ICP, Open vessel (ppm)	16	16	296.9	47.86	295.9	36.14	11.29	12.22%	14.66	6.79%
025.31	Iron, AAS, Dry ash (ppm)	10	10	289.6	93.70	313.2	18.74	7.409	5.98%	8.619	6.74%
025.53	Iron, ICP-MS, Microwave (ppm)	2	2	329.0	9.192						

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
025.99	Iron, Miscellaneous (ppm)	2	2	309.5	10.61						
025.33	Iron, AAS, Microwave (ppm)	1	1	335.6							
027.43	Magnesium, ICP, Microwave (%)	22	22	0.3037	0.0226	0.3002	0.0157	0.0042	5.22%	0.0086	4.79%
027.42	Magnesium, ICP, Open vessel (%)	17	16	0.2988	0.0155	0.2995	0.0161	0.0050	5.36%	0.0077	4.80%
027.41	Magnesium, ICP, Dry ash (%)	15	15	0.2977	0.0120	0.2980	0.0131	0.0042	4.39%	0.0106	4.80%
027.31	Magnesium, AAS, Dry ash (%)	11	10	0.2986	0.0218	0.2994	0.0229	0.0090	7.64%	0.0033	4.80%
027.99	Magnesium, Miscellaneous (%)	4	4	0.2850	0.0041	0.2850	0.0041	0.0020	1.43%	0.0100	4.83%
027.53	Magnesium, ICP-MS, Microwave (%)	3	3	0.3187	0.0237	0.3187	0.0237	0.0167	7.43%	0.0473	4.75%
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.2650							
027.44	Magnesium, ICP, Dry ash (%)	1	1	0.2920							
028.43	Manganese, ICP, Microwave (ppm)	27	26	234.7	20.29	234.2	16.48	4.039	7.04%	8.157	7.04%
028.41	Manganese, ICP, Dry ash (ppm)	17	17	228.1	22.55	227.2	20.02	6.069	8.81%	5.890	7.07%
028.42	Manganese, ICP, Open vessel (ppm)	18	17	233.3	21.44	232.5	21.75	6.594	9.35%	8.046	7.05%
028.31	Manganese, AAS, Dry ash (ppm)	11	11	227.5	15.19	227.8	16.49	6.214	7.24%	7.543	7.07%
028.53	Manganese, ICP-MS, Microwave (ppm)	4	4	234.6	17.85	234.6	17.85	8.927	7.61%	22.25	7.04%
028.99	Manganese, Miscellaneous (ppm)	4	4	220.4	10.95	220.4	10.95	5.475	4.97%	9.250	7.10%
028.44	Manganese, ICP, Dry ash (ppm)	2	2	224.0	18.33						
028.32	Manganese, AAS, Open vessel (ppm)	1	1	237.5							
028.33	Manganese, AAS, Microwave (ppm)	1	1	248.1							
028.52	Manganese, ICP-MS, Open vessel (ppm)	1	1	229.0							
031.01	Phosphorus, Photometric (%)	30	28	0.5881	0.0385	0.5907	0.0367	0.0087	6.21%	0.0195	4.33%
031.43	Phosphorus, ICP, Microwave (%)	28	28	0.6112	0.0325	0.6120	0.0334	0.0079	5.45%	0.0136	4.31%
031.41	Phosphorus, ICP, Dry ash (%)	20	19	0.5959	0.0247	0.5969	0.0257	0.0074	4.31%	0.0117	4.32%
031.42	Phosphorus, ICP, Open vessel (%)	18	17	0.6059	0.0312	0.6060	0.0347	0.0105	5.73%	0.0143	4.31%
031.53	Phosphorus, ICP-MS, Microwave (%)	4	4	0.5828	0.0417	0.5828	0.0417	0.0208	7.15%	0.0270	4.34%
031.99	Phosphorus, Miscellaneous (%)	4	3	0.5456	0.0337	0.5456	0.0337	0.0238	6.17%	0.0016	4.38%
031.03	Phosphorus, Autoanalyzer (%)	2	2	0.5780	0.0608						
031.44	Phosphorus, ICP, Dry ash (%)	2	2	0.5940	0.0120						
031.06	Phosphorus, Hach Method (%)	1	1	0.6400							
032.43	Potassium, ICP, Microwave (%)	19	18	1.102	0.0763	1.094	0.0570	0.0168	5.20%	0.0124	3.95%
032.41	Potassium, ICP, Dry ash (%)	16	16	1.079	0.0450	1.080	0.0494	0.0155	4.58%	0.0308	3.95%
032.42	Potassium, ICP, Open vessel (%)	15	14	1.088	0.0774	1.091	0.0828	0.0276	7.59%	0.0230	3.95%
032.31	Potassium, AAS, Dry ash (%)	7	7	1.026	0.0861	1.026	0.0976	0.0461	9.51%	0.0321	3.98%
032.99	Potassium, Miscellaneous (%)	4	4	1.066	0.0605	1.066	0.0605	0.0302	5.67%	0.0325	3.96%
032.53	Potassium, ICP-MS, Microwave (%)	3	3	1.105	0.0378	1.105	0.0378	0.0218	3.42%	0.0633	3.94%
032.08	Potassium, Ion-selective electrode (%)	1	1	0.8400							
032.32	Potassium, AAS, Open vessel (%)	1	1	0.9950							
032.44	Potassium, ICP, Dry ash (%)	1	1	1.130							
032.52	Potassium, ICP-MS, Open vessel (%)	1	1	1.020							
033.01	Salt as chloride, Poten Cl (%)	23	23	1.186	0.0632	1.186	0.0294	0.0077	2.48%	0.0200	3.90%

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
033.00	Salt as chloride, Sol Cl (%)	18	17	1.222	0.1735	1.185	0.0741	0.0225	6.25%	0.0385	3.90%
033.99	Salt, Miscellaneous (%)	13	13	1.172	0.1550	1.178	0.1515	0.0525	12.86%	0.0205	3.90%
033.03	Salt as chloride, Quantab (%)	5	5	1.145	0.1287	1.145	0.1287	0.0575	11.24%	0.0140	3.92%
033.05	Salt as chloride, Ion Sel Electrode (%)	4	4	1.123	0.1375	1.123	0.1375	0.0687	12.24%	0.0200	3.93%
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	8	8	3.045	0.2374	3.045	0.2692	0.1190	8.84%	0.3205	13.53%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	4	4	2.441	0.4190	2.441	0.4190	0.2095	17.16%	0.4859	13.99%
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	4	3	3.136	0.6999	3.136	0.6999	0.4041	22.32%	0.1603	13.47%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	3	3	3.245	0.4027	3.245	0.4027	0.2325	12.41%	0.1767	13.40%
034.41	Selenium, Total (Se), ICP, Dry ash (ppm)	2	2	3.245	0.5162						
034.01	Selenium, Total (Se), Fluor (ppm)	1	1	3.110							
034.42	Selenium, Total (Se), ICP, Open vessel (ppm)	1	1	3.050							
034.99	Selenium, Total (Se), Miscellaneous (ppm)	1	1	2.805							
035.43	Sodium, ICP, Microwave (%)	22	21	0.3791	0.0289	0.3745	0.0198	0.0054	5.30%	0.0107	4.64%
035.41	Sodium, ICP, Dry ash (%)	20	20	0.3684	0.0204	0.3697	0.0200	0.0056	5.40%	0.0112	4.65%
035.42	Sodium, ICP, Open vessel (%)	16	16	0.3679	0.0180	0.3679	0.0204	0.0064	5.55%	0.0138	4.65%
035.31	Sodium, AAS, Dry ash (%)	8	8	0.3699	0.0187	0.3699	0.0212	0.0094	5.74%	0.0081	4.65%
035.99	Sodium, Miscellaneous (%)	5	5	0.3280	0.1494	0.3280	0.1494	0.0668	45.54%	0.0080	4.73%
035.53	Sodium, ICP-MS, Microwave (%)	3	3	0.3727	0.0125	0.3727	0.0125	0.0072	3.35%	0.0400	4.64%
035.01	Sodium, Ion-selective electrode (%)	1	1	0.3900							
035.05	Sodium, Flame Emission (%)	1	1	0.4300							
035.32	Sodium, AAS, Open vessel (%)	1	1	0.3550							
036.42	Sulfur, ICP, Open vessel (%)	19	19	0.2520	0.0211	0.2501	0.0166	0.0048	6.65%	0.0073	4.93%
036.43	Sulfur, ICP, Microwave (%)	15	15	0.2722	0.0211	0.2720	0.0235	0.0076	8.66%	0.0081	4.87%
036.04	Sulfur, LECO (%)	3	3	0.2462	0.0245	0.2462	0.0245	0.0141	9.94%	0.0083	4.94%
036.99	Sulfur, Miscellaneous (%)	2	2	0.2300	0.0141						
036.00	Sulfur, Gravimetric (%)	1	1	0.2150							
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.2600							
037.43	Zinc, ICP, Microwave (ppm)	28	28	425.4	43.14	423.8	41.91	9.901	9.89%	15.14	6.44%
037.42	Zinc, ICP, Open vessel (ppm)	17	17	428.2	44.86	425.4	43.52	13.19	10.23%	20.07	6.43%
037.41	Zinc, ICP, Dry ash (ppm)	17	16	408.2	28.72	407.8	31.92	9.974	7.83%	9.313	6.47%
037.31	Zinc, AAS, Dry ash (ppm)	10	10	407.1	27.09	407.1	30.72	12.14	7.55%	7.578	6.48%
037.99	Zinc, Miscellaneous (ppm)	5	5	327.1	191.6	327.1	191.6	85.69	58.57%	14.20	6.69%
037.53	Zinc, ICP-MS, Microwave (ppm)	3	3	427.0	33.05	427.0	33.05	19.08	7.74%	52.00	6.43%
037.33	Zinc, AAS, Microwave (ppm)	2	2	446.2	29.91						
037.44	Zinc, ICP, Dry ash (ppm)	2	2	390.7	65.31						
037.32	Zinc, AAS, Open vessel (ppm)	1	1	425.0							
037.52	Zinc, ICP-MS, Open vessel (ppm)	1	1	335.6							
038.43	Molybdenum, ICP, Microwave (ppm)	6	6	3.556	0.4229	3.556	0.4795	0.2447	13.49%	0.0983	13.22%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	4	4	3.944	0.0976	3.944	0.0976	0.0488	2.47%	0.2773	13.01%
038.42	Molybdenum, ICP, Open vessel (ppm)	3	3	4.765	1.570	4.765	1.570	0.9064	32.95%	0.4033	12.65%

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
038.41	Molybdenum, ICP, Dry ash (ppm)	2	2	3.678	0.7672						
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	1	1	3.405							
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	4.540							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	2.390							
042.00	Chloride, Titrimetric (%)	4	3	0.7267	0.0029	0.7267	0.0029	0.0017	0.40%	0.0067	4.20%
042.01	Chloride, Ion-selective electrode (%)	1	1	0.6400							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	1,055							
102.01	Niacin, Microbiological (ppm)	1	1	31.40							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	6.510							
104.00	Riboflavin, Fluorometric (ppm)	1	1	3.605							
105.01	Thiamine, Fluorometer (ppm)	1	1	1.860							
106.02	Vitamin A, LC (KU / kg)	10	10	41.55	10.39	40.93	10.31	4.076	25.20%	3.935	
106.01	Vitamin A, UV (KU / kg)	2	2	85.07	41.10						
106.00	Vitamin A, Color (KU / kg)	1	1	40.30							
107.00	Vitamin B12, Microbiological (ppb)	1	1	4.570							
108.02	Vitamin D3, LC (KU / kg)	2	2	5.253	0.1450						
109.02	Vitamin E, LC (IU / kg)	9	9	129.1	25.45	129.1	28.86	12.03	22.36%	10.76	
109.99	Vitamin E, Miscellaneous (IU / kg)	1	1	15,500							
111.00	Vitamin C, Phosphorylated, LC (ppm)	1	1	4.400							
112.01	Pyridoxine, LC (µg / g)	1	1	2.695							
113.01	Folic Acid, Micro (ppm)	1	1	0.7585							
114.01	Biotin, Microbiological (ppm)	1	1	0.2385							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	3	3	2.887	3.276	2.887	3.276	2.317	113.47%	0.0197	3.41%
115.99	Non Protein N (NPN), Miscellaneous (%)	3	3	0.7767	0.4171	0.7767	0.4171	0.2408	53.71%	0.0107	4.15%
115.01	Non Protein N (NPN), Automated (%)	1	1	0.0400							
118.99	Peroxide value, Miscellaneous (meq/kg)	2	2	3.353	2.047						
120.00	Alanine, Post-col Ninhydrin Der (%)	18	17	0.6332	0.0354	0.6332	0.0401	0.0122	6.34%	0.0083	4.28%
120.05	Alanine, Pre-col AQC Der (%)	5	4	0.7035	0.1310	0.7035	0.1310	0.0655	18.63%	0.0045	4.22%
120.01	Alanine, Pre-col OPA Der (%)	1	1	0.6175							
120.02	Alanine, Post-col OPA Der (%)	1	1	0.6575							
120.99	Alanine, Miscellaneous (%)	1	1	0.6650							
121.00	Arginine, Post-col Ninhydrin Der (%)	18	17	0.8267	0.0392	0.8296	0.0367	0.0111	4.42%	0.0175	4.11%
121.05	Arginine, Pre-col AQC Der (%)	5	3	0.7827	0.0435	0.7827	0.0435	0.0251	5.56%	0.0053	4.15%
121.01	Arginine, Pre-col OPA Der (%)	1	1	0.8380							
121.02	Arginine, Post-col OPA Der (%)	1	1	0.8255							
121.99	Arginine, Miscellaneous (%)	1	1	0.8200							
122.00	Aspartic, Post-col Ninhydrin Der (%)	18	17	1.250	0.0680	1.257	0.0578	0.0175	4.60%	0.0237	3.86%
122.05	Aspartic, Pre-col AQC Der (%)	5	5	1.268	0.0911	1.268	0.0911	0.0407	7.18%	0.0390	3.86%
122.01	Aspartic, Pre-col OPA Der (%)	1	1	1.194							
122.02	Aspartic, Post-col OPA Der (%)	1	1	1.303							

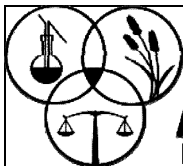
Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
122.99	Aspartic, Miscellaneous (%)	1	1	1.295							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	18	18	0.2108	0.0183	0.2108	0.0207	0.0061	9.82%	0.0092	5.06%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	3	3	0.2170	0.0321	0.2170	0.0321	0.0227	14.78%	0.0060	5.03%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.2300							
124.99	Cysteine/Cystine, Miscellaneous (%)	1	1	0.2050							
125.00	Glutamic, Post-col Ninhydrin Der (%)	18	17	2.355	0.1193	2.356	0.1333	0.0404	5.66%	0.0359	3.52%
125.05	Glutamic, Pre-col AQC Der (%)	5	4	2.508	0.4601	2.508	0.4601	0.2301	18.35%	0.0110	3.48%
125.01	Glutamic, Pre-col OPA Der (%)	1	1	2.559							
125.02	Glutamic, Post-col OPA Der (%)	1	1	2.372							
125.99	Glutamic, Miscellaneous (%)	1	1	2.440							
126.00	Glycine, Post-col Ninhydrin Der (%)	18	17	0.5420	0.0282	0.5431	0.0296	0.0090	5.45%	0.0068	4.38%
126.05	Glycine, Pre-col AQC Der (%)	5	5	0.5684	0.1248	0.5684	0.1248	0.0558	21.96%	0.0144	4.35%
126.01	Glycine, Pre-col OPA Der (%)	1	1	0.4900							
126.02	Glycine, Post-col OPA Der (%)	1	1	0.5625							
126.99	Glycine, Miscellaneous (%)	1	1	0.5550							
127.00	Histidine, Post-col Ninhydrin Der (%)	18	18	0.3280	0.0325	0.3239	0.0216	0.0064	6.66%	0.0105	4.74%
127.05	Histidine, Pre-col AQC Der (%)	5	5	0.3155	0.0552	0.3155	0.0552	0.0247	17.48%	0.0058	4.76%
127.01	Histidine, Pre-col OPA Der (%)	1	1	0.3705							
127.02	Histidine, Post-col OPA Der (%)	1	1	0.3220							
127.99	Histidine, Miscellaneous (%)	1	1	0.3600							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	18	17	0.4891	0.0489	0.4909	0.0494	0.0150	10.05%	0.0122	4.45%
128.05	Isoleucine, Pre-col AQC Der (%)	5	4	0.5161	0.1205	0.5161	0.1205	0.0603	23.35%	0.0053	4.42%
128.01	Isoleucine, Pre-col OPA Der (%)	1	1	0.4940							
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.5270							
128.99	Isoleucine, Miscellaneous (%)	1	1	0.5200							
129.00	Leucine, Post-col Ninhydrin Der (%)	18	17	0.9974	0.0648	0.9983	0.0715	0.0217	7.16%	0.0147	4.00%
129.05	Leucine, Pre-col AQC Der (%)	5	4	1.053	0.2328	1.053	0.2328	0.1164	22.11%	0.0043	3.97%
129.01	Leucine, Pre-col OPA Der (%)	1	1	0.9970							
129.02	Leucine, Post-col OPA Der (%)	1	1	1.046							
129.99	Leucine, Miscellaneous (%)	1	1	1.055							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	18	17	0.6363	0.0361	0.6392	0.0332	0.0101	5.19%	0.0102	4.28%
130.05	L-Lysine, Pre-col AQC Der (%)	5	4	0.8250	0.2949	0.8250	0.2949	0.1475	35.75%	0.0055	4.12%
130.01	L-Lysine, Pre-col OPA Der (%)	1	1	0.7295							
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.6900							
130.99	L-Lysine, Miscellaneous (%)	1	1	0.6950							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	18	18	0.1905	0.0209	0.1903	0.0229	0.0067	12.03%	0.0089	5.13%
131.05	Methionine, PAO Pre-col AQC Der (%)	4	3	0.1803	0.0045	0.1803	0.0045	0.0026	2.50%	0.0047	5.18%
131.01	Methionine, PAO Pre-col OPA Der (%)	1	1	0.3055							
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.1970							
131.99	Methionine, Miscellaneous (%)	1	1	0.1950							

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
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	18	17	0.6114	0.0537	0.6129	0.0575	0.0174	9.39%	0.0084	4.31%
132.05	Phenylalanine, Pre-col AQC Der (%)	5	5	0.6409	0.0902	0.6409	0.0902	0.0403	14.07%	0.0094	4.28%
132.01	Phenylalanine, Pre-col OPA Der (%)	1	1	0.6070							
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.6395							
132.99	Phenylalanine, Miscellaneous (%)	1	1	0.6250							
133.00	Proline, Post-col Ninhydrin Der (%)	18	17	0.7602	0.0998	0.7618	0.0655	0.0199	8.60%	0.0128	4.17%
133.05	Proline, Pre-col AQC Der (%)	5	4	0.8076	0.0689	0.8076	0.0689	0.0345	8.53%	0.0133	4.13%
133.99	Proline, Miscellaneous (%)	1	1	0.7950							
134.00	Serine, Post-col Ninhydrin Der (%)	18	17	0.6110	0.0367	0.6110	0.0416	0.0126	6.81%	0.0116	4.31%
134.05	Serine, Pre-col AQC Der (%)	5	5	0.6436	0.0620	0.6436	0.0620	0.0277	9.63%	0.0112	4.27%
134.01	Serine, Pre-col OPA Der (%)	1	1	0.6380							
134.02	Serine, Post-col OPA Der (%)	1	1	0.5680							
134.99	Serine, Miscellaneous (%)	1	1	0.6400							
135.00	Threonine, Post-col Ninhydrin Der (%)	18	17	0.4727	0.0266	0.4728	0.0276	0.0084	5.83%	0.0089	4.48%
135.05	Threonine, Pre-col AQC Der (%)	5	4	0.4753	0.0390	0.4753	0.0390	0.0195	8.21%	0.0030	4.47%
135.01	Threonine, Pre-col OPA Der (%)	1	1	0.5105							
135.02	Threonine, Post-col OPA Der (%)	1	1	0.4650							
135.99	Threonine, Miscellaneous (%)	1	1	0.4900							
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	7	7	0.2172	0.1166	0.1964	0.0790	0.0373	40.20%	0.0042	5.11%
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	4	3	0.1590	0.0027	0.1590	0.0027	0.0015	1.67%	0.0014	5.28%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	1	1	0.1620							
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.1500							
136.05	Tryptophan, Pre-col AQC Der (%)	1	1	0.1600							
136.99	Tryptophan, Miscellaneous (%)	1	1	0.1200							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	14	14	0.4053	0.0566	0.4053	0.0642	0.0214	15.84%	0.0119	4.58%
137.05	Tyrosine, Pre-col AQC Der (%)	5	5	0.4551	0.0976	0.4551	0.0976	0.0436	21.44%	0.0090	4.50%
137.01	Tyrosine, Pre-col OPA Der (%)	1	1	0.4835							
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.3495							
137.99	Tyrosine, Miscellaneous (%)	1	1	0.3850							
138.00	Valine, Post-col Ninhydrin Der (%)	18	17	0.6055	0.0477	0.6103	0.0410	0.0124	6.71%	0.0080	4.31%
138.05	Valine, Pre-col AQC Der (%)	5	4	0.5805	0.1024	0.5805	0.1024	0.0512	17.63%	0.0050	4.34%
138.01	Valine, Pre-col OPA Der (%)	1	1	0.6120							
138.02	Valine, Post-col OPA Der (%)	1	1	0.6350							
138.99	Valine, Miscellaneous (%)	1	1	0.6600							
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.1235	0.0799						
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
139.05	Taurine, Pre-col AQC Der (%)	1		0.0300							
139.99	Taurine, Miscellaneous (%)	1		0.0100							
160.99	Fructose, Miscellaneous (%)	3	3	0.6880	0.0866	0.6880	0.0866	0.0500	12.59%	0.0460	4.23%
162.99	Glucose, Miscellaneous (%)	4	3	0.4398	0.0929	0.4398	0.0929	0.0536	21.12%	0.0417	4.53%

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
163.99	Lactose, Miscellaneous (%)	3	1								
164.99	Maltose, Miscellaneous (%)	2	1	0.1450							
165.99	Sucrose, Miscellaneous (%)	3	3	4.093	0.3790	4.093	0.3790	0.2188	9.26%	0.1133	3.24%
166.99	Raffinose, Miscellaneous (%)	2	2	0.3035	0.0658						
167.99	Stachyose, Miscellaneous (%)	2	2	0.7760	0.1471						
351.03	Chlortetracycline, LC (UV or FL) (ppm)	7	7	50.04	6.358	50.04	7.210	3.406	14.41%	2.879	8.88%
351.05	Chlortetracycline, LC-MS/MS (ppm)	4	4	57.49	30.18	57.49	30.18	15.09	52.51%	0.5933	8.69%
351.00	Chlortetracycline, Plate (ppm)	2	2	58.38	8.247						
354.01	Decoquinatone, LC (UV or FL) (ppm)	8	8	41.48	2.330	41.44	2.546	1.125	6.14%	2.346	9.13%
354.02	Decoquinatone, LC (ppm)	5	5	38.41	3.374	38.41	3.374	1.509	8.78%	1.252	9.24%
354.04	Decoquinatone, LC-MS/MS (ppm)	4	4	27.31	4.638	27.31	4.638	2.319	16.98%	0.7335	9.72%
354.00	Decoquinatone, Fluorometric (ppm)	1	1	40.00							
361.05	Lasalocid Sodium, LC-MS/MS (ppm)	1		0.2500							
365.05	Monensin, LC-MS/MS (ppm)	1	1	0.9700							
379.05	Salinomycin, LC-MS/MS (ppm)	1		0.2500							
382.00	Sulfamethazine, Spectrophotometer (ppm)	2	2	94.98	25.07						
382.02	Sulfamethazine, LC-PCD (ppm)	2	2	85.36	0.4419						
382.04	Sulfamethazine, LC-MS/MS (ppm)	2	2	93.84	22.86						
382.01	Sulfamethazine, LC (ppm)	1	1	106.4							
391.03	Narasin, LC-MS/MS (ppm)	1		0.2500							
400.01	Water Activity, Aqualab chilled mirror (Units)	9	9	0.6110	0.0339	0.6168	0.0209	0.0087	3.39%	0.0059	
400.99	Water Activity, Miscellaneous (Units)	1	1	0.6475							
413.01	Starch, Resistant, Enzymatic-Colorimetric (%)	1	1	31.56							
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	4	4	0.1860	0.0506	0.1860	0.0506	0.0253	27.18%	0.0090	20.60%
516.00	Arsenic, Total (As), AA, Hydride (ppm)	2	2	0.1275	0.0106						
516.52	Arsenic, Total (As), ICP-MS, Open vessel (ppm)	1	1	0.1650							
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		10.00							
518.53	Cadmium, ICP-MS, Microwave (ppm)	4	3	0.0607	0.0028	0.0607	0.0028	0.0016	4.68%	0.0007	22.00%
518.41	Cadmium, ICP, Dry ash (ppm)	1	1	0.0425							
518.43	Cadmium, ICP, Microwave (ppm)	1	1	0.2400							
518.52	Cadmium, ICP-MS, Open vessel (ppm)	1	1	0.0600							
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	4	4	4.576	1.661	4.576	1.661	0.8303	36.29%	0.3748	12.72%
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	3	3	4.745	1.352	4.745	1.352	0.7803	28.48%	0.0563	12.65%
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	1	1	2.355							
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	1	1	4.925							
526.53	Lead, ICP-MS, Microwave (ppm)	5	4	0.1548	0.0094	0.1548	0.0094	0.0047	6.09%	0.0200	21.18%
526.41	Lead, ICP, Dry ash (ppm)	1	1	0.0845							
526.43	Lead, ICP, Microwave (ppm)	1	1	4.990							
526.52	Lead, ICP-MS, Open vessel (ppm)	1	1	0.1400							
529.99	Mercury, Miscellaneous (ppb)	3	1								

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
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	3.473	0.2440						
539.41	Nickel, ICP, Dry ash (ppm)	1	1	2.608							
539.43	Nickel, ICP, Microwave (ppm)	1	1	3.870							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	1		0.0050							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	1	1	0.0204							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	1	1	0.7886							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	1	1	0.0218							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.2032							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	1	1	1.327							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	1	1	2.137							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	1	1	0.1713							
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	1	1	0.0170							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0199							
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))	1	1	0.0142							
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1		0.0050							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (% (w/w))	1		0.0050							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0112							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (% (w/w))	1		0.0050							
752.99	Nervonic Acid (24:1) isomers, Miscellaneous (% (w/w))	1		0.0050							
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	25.64							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	32.83							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	41.54							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	1	1	4.731							

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

Methods Reported: 120

Beef feed, Medicated

Method Precision Report

Labs Reporting: 166

Test Material Code # 202131

Issue Date : 12/31/2021

Method Code	Analyte and Method	Total # Labs Submitting	# Labs used in Precision Calcs	Precision Mean	Precision SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	44	40	10.99	0.4629	0.4182	0.0804	0.4259	3.79%	0.73%	3.86%	5.296
001.99	Loss on Drying, Miscellaneous (%)	15	12	10.93	0.6192	0.3087	0.0392	0.3111	2.77%	0.35%	2.79%	7.943
002.01	Protein, Crude, Auto Kjeh-Foss (%)	16	14	19.54	0.4457	0.3053	0.1843	0.3566	1.57%	0.95%	1.83%	1.935
002.05	Protein, Crude, Copper, Boric Acid (%)	27	24	19.32	0.3957	0.3163	0.1854	0.3667	1.64%	0.96%	1.90%	1.977
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	106	97	19.75	0.5309	0.3934	0.2266	0.4540	2.00%	1.15%	2.31%	2.003
002.11	Protein, Crude, NIR (%)	6	6	19.35	2.199	2.192	0.2461	2.206	11.33%	1.27%	11.40%	8.964
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	14	13	4.494	0.4085	0.3954	0.1487	0.4224	8.86%	3.33%	9.46%	2.841
003.06	Fat, Crude, Pet Ether (%)	12	12	4.598	0.2058	0.1973	0.0825	0.2139	4.29%	1.79%	4.65%	2.591
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	13	13	4.523	0.1982	0.1930	0.0639	0.2033	4.27%	1.41%	4.50%	3.183
003.10	Fat, Crude, Randall, Pet Ether (%)	25	23	4.397	0.1849	0.1514	0.0562	0.1615	3.43%	1.27%	3.66%	2.875
003.11	Fat, Crude, NIR (%)	5	5	4.457	0.6188	0.6180	0.0432	0.6196	13.87%	0.97%	13.90%	14.33
003.12	Fat, Crude, Hexane Ext (%)	5	5	5.190	0.7067	0.6989	0.1480	0.7144	13.47%	2.85%	13.77%	4.828
003.13	Fat, Crude, Randall, Hexane Ext. (%)	7	7	4.520	0.1030	0.0839	0.0846	0.1191	1.86%	1.87%	2.64%	1.408
003.14	Fat, Crude, Ankom (%)	46	44	4.458	0.3139	0.3069	0.1150	0.3278	6.88%	2.58%	7.35%	2.851
004.00	Fiber, Crude, Asbestos Free (%)	11	10	10.26	0.5252	0.5415	0.1353	0.5581	5.28%	1.32%	5.45%	4.124
004.03	Fiber, Crude, Fritted Glass (%)	6	5	9.518	0.9170	0.1856	0.4363	0.4742	2.02%	4.76%	5.17%	1.087
004.06	Fiber, Crude, Fibertec (%)	19	17	10.04	0.5707	0.5559	0.1779	0.5837	5.56%	1.78%	5.84%	3.280
004.07	Fiber, Crude, ANKOM (%)	66	60	10.25	1.194	0.8496	0.2779	0.8939	8.30%	2.71%	8.73%	3.217
004.11	Fiber, Crude, NIR (%)	6	6	9.113	3.098	3.096	0.1640	3.100	33.97%	1.80%	34.02%	18.90
005.00	Ash, 2h @ 600°C (%)	81	76	8.256	0.3279	0.2986	0.1287	0.3252	3.61%	1.56%	3.93%	2.527
005.05	Ash, 3h @ 550°C (%)	27	24	8.534	0.3183	0.3257	0.0831	0.3362	3.82%	0.97%	3.94%	4.046
005.99	Ash, Miscellaneous (%)	9	9	8.251	0.5787	0.5702	0.1394	0.5870	6.91%	1.69%	7.11%	4.212
006.99	Total Sugars, Miscellaneous (%)	7	6	5.772	0.8386	0.8363	0.0885	0.8409	14.49%	1.53%	14.57%	9.506
008.02	Fiber, Acid Detergent, Crucible (%)	13	13	13.66	0.6580	0.6057	0.3639	0.7065	4.43%	2.66%	5.17%	1.942
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	40	39	13.71	1.101	0.7750	0.2963	0.8297	5.70%	2.18%	6.11%	2.800
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	12	11	21.58	1.088	1.074	0.4770	1.175	4.99%	2.22%	5.46%	2.464
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	40	35	21.02	1.508	0.8723	0.2728	0.9140	4.16%	1.30%	4.36%	3.350
010.99	Moisture, Miscellaneous (%)	16	13	10.81	0.8328	0.4949	0.0617	0.4987	4.51%	0.56%	4.54%	8.082
011.01	Loss on Drying, HT, 135°C 2hr (%)	60	55	12.33	0.4124	0.3830	0.1035	0.3967	3.10%	0.84%	3.21%	3.835
012.00	Starch, Polarimetric (Ewers) (%)	16	15	27.23	0.6634	0.6565	0.1350	0.6702	2.41%	0.50%	2.46%	4.965
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	12	11	27.68	3.512	1.470	0.8307	1.689	5.49%	3.10%	6.31%	2.033
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	6	6	27.26	0.8548	0.7751	0.5095	0.9276	2.84%	1.87%	3.40%	1.821
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	15	13	5.404	0.6181	0.6220	0.0759	0.6266	11.43%	1.40%	11.51%	8.251
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	16	14	5.576	0.2496	0.1213	0.1717	0.2102	2.16%	3.05%	3.74%	1.224
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	7	6	4.981	0.2921	0.2913	0.0294	0.2928	5.85%	0.59%	5.88%	9.969
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	7	7	5.366	0.4889	0.4755	0.1608	0.5019	8.86%	3.00%	9.35%	3.122

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
015.43	Aluminum, ICP, Microwave (ppm)	6	5	185.8	25.86	7.576	3.864	8.505	4.31%	2.20%	4.84%	2.201
017.42	Boron, ICP, Open vessel (ppm)	5	5	10.82	1.065	1.029	0.3877	1.100	9.51%	3.58%	10.16%	2.836
017.43	Boron, ICP, Microwave (ppm)	5	5	11.96	1.581	1.560	0.3595	1.601	13.04%	3.01%	13.38%	4.453
019.00	Calcium, Ox-Mn04 Vol. (%)	5	5	1.677	0.1507	0.1450	0.0580	0.1561	8.64%	3.46%	9.31%	2.693
019.08	Calcium, EDTA (%)	12	11	1.711	0.0975	0.0947	0.0327	0.1002	5.54%	1.91%	5.86%	3.068
019.31	Calcium, AAS, Dry ash (%)	19	19	1.711	0.1183	0.1053	0.0762	0.1300	6.15%	4.45%	7.60%	1.706
019.41	Calcium, ICP, Dry ash (%)	21	21	1.705	0.0858	0.0773	0.0524	0.0934	4.54%	3.07%	5.48%	1.783
019.42	Calcium, ICP, Open vessel (%)	17	15	1.718	0.1387	0.1378	0.0341	0.1419	7.98%	1.98%	8.22%	4.161
019.43	Calcium, ICP, Microwave (%)	29	26	1.741	0.1446	0.1011	0.0384	0.1081	5.87%	2.23%	6.28%	2.818
019.99	Calcium, Miscellaneous (%)	5	5	1.659	0.0411		0.0582			3.51%		
021.41	Cobalt, ICP, Dry ash (ppm)	5	5	4.400	1.250	1.246	0.1431	1.254	28.31%	3.25%	28.50%	8.764
021.43	Cobalt, ICP, Microwave (ppm)	9	9	4.830	1.539	1.533	0.1896	1.544	31.74%	3.93%	31.98%	8.145
022.31	Copper, AAS, Dry ash (ppm)	9	9	42.50	4.900	4.775	1.550	5.021	11.24%	3.65%	11.81%	3.238
022.41	Copper, ICP, Dry ash (ppm)	17	16	39.80	4.257	3.189	1.123	3.381	8.15%	2.87%	8.64%	3.010
022.42	Copper, ICP, Open vessel (ppm)	18	18	43.50	3.165	2.952	1.616	3.365	6.79%	3.71%	7.74%	2.083
022.43	Copper, ICP, Microwave (ppm)	26	24	42.53	4.281	3.532	1.252	3.748	8.40%	2.98%	8.91%	2.993
025.31	Iron, AAS, Dry ash (ppm)	10	9	289.6	93.70	18.54	8.543	20.41	5.82%	2.68%	6.41%	2.389
025.41	Iron, ICP, Dry ash (ppm)	16	14	304.9	35.52	25.69	7.318	26.72	8.29%	2.36%	8.62%	3.651
025.42	Iron, ICP, Open vessel (ppm)	16	14	296.9	47.86	36.40	9.774	37.69	12.69%	3.41%	13.14%	3.856
025.43	Iron, ICP, Microwave (ppm)	23	23	320.9	50.21	49.78	9.190	50.62	15.51%	2.86%	15.78%	5.508
027.31	Magnesium, AAS, Dry ash (%)	11	10	0.2986	0.0218	0.0217	0.0035	0.0219	7.25%	1.16%	7.35%	6.355
027.41	Magnesium, ICP, Dry ash (%)	15	15	0.2977	0.0120	0.0101	0.0092	0.0137	3.41%	3.08%	4.59%	1.492
027.42	Magnesium, ICP, Open vessel (%)	17	15	0.2988	0.0155	0.0149	0.0065	0.0163	4.98%	2.15%	5.42%	2.517
027.43	Magnesium, ICP, Microwave (%)	22	20	0.3037	0.0226	0.0157	0.0070	0.0172	5.21%	2.31%	5.70%	2.466
028.31	Manganese, AAS, Dry ash (ppm)	11	11	227.5	15.19	14.49	6.412	15.85	6.37%	2.82%	6.97%	2.472
028.41	Manganese, ICP, Dry ash (ppm)	17	16	228.1	22.55	17.34	5.610	18.23	7.72%	2.50%	8.11%	3.249
028.42	Manganese, ICP, Open vessel (ppm)	18	16	233.3	21.44	21.47	5.263	22.11	9.24%	2.27%	9.52%	4.200
028.43	Manganese, ICP, Microwave (ppm)	27	25	234.7	20.29	15.17	7.425	16.89	6.53%	3.20%	7.28%	2.275
031.01	Phosphorus, Photometric (%)	30	27	0.5881	0.0385	0.0369	0.0141	0.0395	6.26%	2.39%	6.70%	2.806
031.41	Phosphorus, ICP, Dry ash (%)	20	18	0.5959	0.0247	0.0227	0.0089	0.0244	3.83%	1.50%	4.11%	2.742
031.42	Phosphorus, ICP, Open vessel (%)	18	17	0.6059	0.0312	0.0298	0.0131	0.0326	4.93%	2.16%	5.38%	2.493
031.43	Phosphorus, ICP, Microwave (%)	28	26	0.6112	0.0325	0.0289	0.0108	0.0309	4.70%	1.76%	5.02%	2.850
032.31	Potassium, AAS, Dry ash (%)	7	6	1.026	0.0861	0.0841	0.0178	0.0860	8.31%	1.76%	8.50%	4.819
032.41	Potassium, ICP, Dry ash (%)	16	16	1.079	0.0450	0.0407	0.0270	0.0488	3.77%	2.50%	4.53%	1.812
032.42	Potassium, ICP, Open vessel (%)	15	13	1.088	0.0774	0.0731	0.0137	0.0744	6.67%	1.25%	6.79%	5.441
032.43	Potassium, ICP, Microwave (%)	19	17	1.102	0.0763	0.0592	0.0122	0.0604	5.43%	1.12%	5.54%	4.958
033.00	Salt as chloride, Sol Cl (%)	18	15	1.222	0.1735	0.1257	0.0295	0.1291	10.53%	2.47%	10.81%	4.374
033.01	Salt as chloride, Poten Cl (%)	23	21	1.186	0.0632	0.0210	0.0189	0.0282	1.77%	1.59%	2.38%	1.494
033.03	Salt as chloride, Quantab (%)	5	5	1.145	0.1287	0.1282	0.0158	0.1291	11.19%	1.38%	11.28%	8.167
033.99	Salt, Miscellaneous (%)	13	13	1.172	0.1550	0.1544	0.0196	0.1556	13.18%	1.67%	13.28%	7.930
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	8	8	3.045	0.2374	0.1232	0.2870	0.3123	4.05%	9.43%	10.26%	1.088
035.31	Sodium, AAS, Dry ash (%)	8	7	0.3699	0.0187	0.0177	0.0044	0.0183	4.83%	1.21%	4.98%	4.110
035.41	Sodium, ICP, Dry ash (%)	20	19	0.3684	0.0204	0.0197	0.0094	0.0218	5.35%	2.56%	5.93%	2.318
035.42	Sodium, ICP, Open vessel (%)	16	15	0.3679	0.0180	0.0140	0.0126	0.0188	3.78%	3.41%	5.09%	1.495
035.43	Sodium, ICP, Microwave (%)	22	20	0.3791	0.0289	0.0194	0.0095	0.0216	5.18%	2.53%	5.76%	2.280
035.99	Sodium, Miscellaneous (%)	5	5	0.3280	0.1494	0.1493	0.0077	0.1495	45.51%	2.36%	45.57%	19.29

Test Material Code # 202131

Issue Date : 12/31/2021

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
036.42	Sulfur, ICP, Open vessel (%)	19	17	0.2520	0.0211	0.0137	0.0062	0.0150	5.49%	2.50%	6.03%	2.415
036.43	Sulfur, ICP, Microwave (%)	15	15	0.2722	0.0211	0.0205	0.0071	0.0217	7.53%	2.62%	7.97%	3.038
037.31	Zinc, AAS, Dry ash (ppm)	10	10	407.1	27.09	26.59	7.376	27.59	6.53%	1.81%	6.78%	3.741
037.41	Zinc, ICP, Dry ash (ppm)	17	15	408.2	28.72	29.26	6.730	30.02	7.18%	1.65%	7.37%	4.461
037.42	Zinc, ICP, Open vessel (ppm)	17	16	428.2	44.86	32.99	19.02	38.08	7.83%	4.51%	9.04%	2.002
037.43	Zinc, ICP, Microwave (ppm)	28	27	425.4	43.14	41.90	11.97	43.57	9.81%	2.80%	10.20%	3.640
037.99	Zinc, Miscellaneous (ppm)	5	5	327.1	191.6	191.4	13.58	191.8	58.49%	4.15%	58.64%	14.13
038.43	Molybdenum, ICP, Microwave (ppm)	6	6	3.556	0.4229	0.4179	0.0917	0.4278	11.75%	2.58%	12.03%	4.665
106.02	Vitamin A, LC (KU / kg)	10	10	41.55	10.39	10.08	3.525	10.68	24.27%	8.48%	25.71%	3.030
109.02	Vitamin E, LC (IU / kg)	9	9	129.1	25.45	24.46	9.965	26.41	18.95%	7.72%	20.46%	2.650
120.00	Alanine, Post-col Ninhydrin Der (%)	18	17	0.6332	0.0354	0.0348	0.0089	0.0359	5.50%	1.40%	5.67%	4.058
121.00	Arginine, Post-col Ninhydrin Der (%)	18	16	0.8267	0.0392	0.0280	0.0155	0.0320	3.36%	1.86%	3.84%	2.063
122.00	Aspartic, Post-col Ninhydrin Der (%)	18	15	1.250	0.0680	0.0495	0.0213	0.0539	3.93%	1.69%	4.28%	2.526
122.05	Aspartic, Pre-col AQC Der (%)	5	5	1.268	0.0911	0.0870	0.0383	0.0950	6.86%	3.02%	7.49%	2.481
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	18	17	0.2108	0.0183	0.0181	0.0075	0.0195	8.56%	3.54%	9.26%	2.619
125.00	Glutamic, Post-col Ninhydrin Der (%)	18	16	2.355	0.1193	0.1120	0.0269	0.1152	4.78%	1.15%	4.92%	4.284
126.00	Glycine, Post-col Ninhydrin Der (%)	18	16	0.5420	0.0282	0.0245	0.0060	0.0252	4.48%	1.10%	4.62%	4.196
126.05	Glycine, Pre-col AQC Der (%)	5	5	0.5684	0.1248	0.1245	0.0124	0.1251	21.90%	2.19%	22.01%	10.07
127.00	Histidine, Post-col Ninhydrin Der (%)	18	16	0.3280	0.0325	0.0224	0.0087	0.0240	6.89%	2.68%	7.40%	2.763
127.05	Histidine, Pre-col AQC Der (%)	5	5	0.3155	0.0552	0.0550	0.0051	0.0553	17.44%	1.63%	17.52%	10.74
128.00	Isoleucine, Post-col Ninhydrin Der (%)	18	17	0.4891	0.0489	0.0482	0.0112	0.0495	9.86%	2.28%	10.12%	4.439
129.00	Leucine, Post-col Ninhydrin Der (%)	18	17	0.9974	0.0648	0.0639	0.0155	0.0658	6.41%	1.55%	6.59%	4.243
130.00	L-Lysine, Post-col Ninhydrin Der (%)	18	15	0.6363	0.0361	0.0274	0.0088	0.0288	4.26%	1.37%	4.48%	3.275
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	18	18	0.1905	0.0209	0.0200	0.0081	0.0216	10.52%	4.27%	11.36%	2.658
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	18	16	0.6114	0.0537	0.0539	0.0071	0.0543	8.77%	1.16%	8.85%	7.658
132.05	Phenylalanine, Pre-col AQC Der (%)	5	5	0.6409	0.0902	0.0900	0.0082	0.0904	14.04%	1.27%	14.10%	11.08
133.00	Proline, Post-col Ninhydrin Der (%)	18	15	0.7602	0.0998	0.0486	0.0122	0.0501	6.38%	1.61%	6.58%	4.094
134.00	Serine, Post-col Ninhydrin Der (%)	18	17	0.6110	0.0367	0.0357	0.0123	0.0377	5.84%	2.01%	6.17%	3.075
134.05	Serine, Pre-col AQC Der (%)	5	5	0.6436	0.0620	0.0615	0.0111	0.0624	9.55%	1.72%	9.70%	5.639
135.00	Threonine, Post-col Ninhydrin Der (%)	18	17	0.4727	0.0266	0.0258	0.0090	0.0273	5.46%	1.90%	5.78%	3.046
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	7	6	0.2172	0.1166	0.0503	0.0049	0.0506	28.48%	2.80%	28.62%	10.22
137.00	Tyrosine, Post-col Ninhydrin Der (%)	14	14	0.4053	0.0566	0.0559	0.0130	0.0574	13.78%	3.22%	14.15%	4.400
137.05	Tyrosine, Pre-col AQC Der (%)	5	5	0.4551	0.0976	0.0974	0.0075	0.0977	21.41%	1.64%	21.47%	13.09
138.00	Valine, Post-col Ninhydrin Der (%)	18	16	0.6055	0.0477	0.0380	0.0091	0.0390	6.20%	1.48%	6.37%	4.291
351.03	Chlortetracycline, LC (UV or FL) (ppm)	7	7	50.04	6.358	6.070	2.673	6.633	12.13%	5.34%	13.26%	2.481
354.01	Decoquinatate, LC (UV or FL) (ppm)	8	8	41.48	2.330	1.722	2.220	2.810	4.15%	5.35%	6.77%	1.266
354.02	Decoquinatate, LC (ppm)	5	5	38.41	3.374	3.277	1.134	3.468	8.53%	2.95%	9.03%	3.057
400.01	Water Activity, Aqualab chilled mirror (Units)	9	8	0.6110	0.0339	0.0155	0.0063	0.0167	2.49%	1.01%	2.69%	2.660

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