



AAFCO
Proficiency Testing Program



Animal Feed Scheme
Sheep Feed, Medicated
Test Material Code # 202128

Method Summary Report
(Precision Report Follows)

Labs Reporting: 172
Methods Reported: 356
Issue Date : 09/30/2021

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	3.250							
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	53	52	8.195	0.3531	8.224	0.2198	0.0381	2.67%	0.1149	2.91%
001.99	Loss on Drying, Miscellaneous (%)	18	17	8.070	0.5235	8.057	0.4831	0.1465	6.00%	0.0749	2.92%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	5	5	8.263	0.3431	8.263	0.3431	0.1534	4.15%	0.0660	2.91%
001.03	Loss on Drying, Low temp. methods (%)	2	2	8.238	0.0460						
001.05	Loss on Drying, LECO (%)	1	1	8.294							
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	119	116	34.68	0.5266	34.69	0.3225	0.0374	0.93%	0.2556	1.70%
002.05	Protein, Crude, Copper, Boric Acid (%)	23	23	34.01	1.176	34.08	0.4441	0.1157	1.30%	0.2004	1.71%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	15	14	34.34	0.5715	34.23	0.2871	0.0959	0.84%	0.0964	1.71%
002.11	Protein, Crude, NIR (%)	6	6	39.00	1.561	38.89	1.493	0.7619	3.84%	0.2067	1.60%
002.00	Protein, Crude, Crude (%)	2	2	35.18	0.6505						
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	2	2	34.15	0.4122						
002.08	Protein, Crude, Cu/Ti (%)	2	2	34.57	0.3218						
002.10	Protein, Crude, Block dig/distillation (%)	2	2	33.94	0.0566						
002.04	Protein, Crude, Copper Catalyst (%)	1	1	34.53							
003.14	Fat, Crude, Ankom (%)	48	47	3.868	0.3738	3.813	0.2418	0.0441	6.34%	0.1009	3.27%
003.10	Fat, Crude, Randall, Pet Ether (%)	28	28	3.761	0.2777	3.760	0.2824	0.0667	7.51%	0.1104	3.28%
003.06	Fat, Crude, Pet Ether (%)	16	16	3.947	0.3747	3.919	0.3145	0.0983	8.02%	0.0429	3.26%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	12	12	4.091	0.4996	4.040	0.4321	0.1559	10.70%	0.1389	3.24%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	12	11	4.041	0.4716	4.032	0.5160	0.1945	12.80%	0.0783	3.24%
003.11	Fat, Crude, NIR (%)	6	6	4.768	1.138	4.674	1.066	0.5441	22.81%	0.1150	3.17%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	6	6	3.821	0.6020	3.955	0.3407	0.1738	8.61%	0.0999	3.25%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	3	3	3.942	0.3679	3.942	0.3679	0.2601	9.33%	0.2000	3.25%
003.99	Fat, Crude, Miscellaneous (%)	3	3	4.123	0.1904	4.123	0.1904	0.1099	4.62%	0.1333	3.23%
003.12	Fat, Crude, Hexane Ext (%)	2	2	4.028	0.3005						
004.07	Fiber, Crude, ANKOM (%)	70	68	8.887	1.286	8.866	1.406	0.2131	15.86%	0.3204	2.88%
004.06	Fiber, Crude, Fibertec (%)	18	18	7.100	0.4714	7.115	0.5007	0.1475	7.04%	0.1675	2.98%
004.00	Fiber, Crude, Asbestos Free (%)	13	13	8.052	0.9887	8.041	1.098	0.3805	13.65%	0.3447	2.92%
004.11	Fiber, Crude, NIR (%)	5	5	10.91	4.735	10.91	4.735	2.118	43.41%	0.2540	2.79%

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004.03	Fiber, Crude, Fritted Glass (%)	4	4	8.394	2.532	8.394	2.532	1.266	30.16%	0.5375	2.90%
004.99	Fiber, Crude, Miscellaneous (%)	1	1	6.600							
005.00	Ash, 2h @ 600°C (%)	89	88	21.45	0.7995	21.49	0.7567	0.1008	3.52%	0.2369	2.16%
005.05	Ash, 3h @ 550°C (%)	28	26	22.11	0.4942	22.13	0.4977	0.1220	2.25%	0.2986	2.13%
005.99	Ash, Miscellaneous (%)	8	8	22.06	1.072	22.11	1.096	0.4845	4.96%	0.1863	2.13%
005.11	Ash, NIR (%)	4	4	16.34	2.767	16.34	2.767	1.384	16.93%	0.2450	2.47%
005.02	Ash, LECO (%)	1	1	23.03							
006.99	Total Sugars, Miscellaneous (%)	3	3	3.877	1.553	3.877	1.553	0.8964	40.05%	0.2733	3.26%
006.00	Total Sugars, As sucrose (%)	2	2	4.603	0.1450						
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	43	42	10.92	2.417	10.40	0.8379	0.1616	8.06%	0.3131	2.81%
008.02	Fiber, Acid Detergent, Crucible (%)	14	14	9.991	0.5165	9.988	0.5398	0.1803	5.40%	0.2051	2.83%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	4	4	10.30	1.351	10.30	1.351	0.6757	13.12%	0.3053	2.82%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	11.10							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	42	41	19.32	2.868	18.79	1.594	0.3112	8.48%	0.5382	2.31%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	14	14	18.63	1.665	18.49	1.421	0.4748	7.69%	0.5871	2.33%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	3	3	25.34	7.205	25.34	7.205	4.160	28.44%	0.4233	1.99%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	2	2	20.10	0.0778						
010.99	Moisture, Miscellaneous (%)	16	15	7.979	1.093	8.173	0.3992	0.1288	4.88%	0.1326	2.92%
010.11	Moisture, NIR (%)	4	4	8.056	1.006	8.056	1.006	0.5030	12.49%	0.1475	2.92%
010.03	Moisture, Karl-Fischer (%)	2	2	8.013	0.4632						
011.01	Loss on Drying, HT, 135°C 2hr (%)	65	64	9.336	0.3535	9.319	0.3469	0.0542	3.72%	0.1138	2.86%
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	4	4	9.173	0.6812	9.173	0.6812	0.3406	7.43%	0.2453	2.87%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	2	2	9.125	0.3182						
011.03	Loss on Drying, HT, 130°C, 1 hour, Flour (%)	1	1	9.065							
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	9	9	3.370	0.6485	3.342	0.6713	0.2797	20.09%	0.1064	3.34%
012.00	Starch, Polarimetric (Ewers) (%)	8	7	3.499	0.3865	3.499	0.4383	0.2071	12.53%	0.1114	3.31%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	5	5	3.846	1.072	3.846	1.072	0.4795	27.88%	0.3000	3.27%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	3	3	2.983	0.6127	2.983	0.6127	0.3537	20.54%	0.1046	3.39%
012.11	Starch, NIR (%)	3	3	7.376	5.363	7.376	5.363	3.096	72.71%	0.3550	2.96%
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	2.925							
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	17	16	4.753	0.6132	4.753	0.6954	0.2173	14.63%	0.0858	3.16%
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	16	15	5.196	0.7238	5.236	0.6920	0.2233	13.22%	0.1748	3.12%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	7	7	5.120	0.3682	5.120	0.4176	0.1973	8.16%	0.2876	3.13%
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	6	6	4.295	0.4845	4.251	0.4436	0.2264	10.44%	0.1727	3.22%
015.43	Aluminum, ICP, Microwave (ppm)	7	7	293.1	39.95	293.1	45.30	21.40	15.46%	11.52	6.80%
015.41	Aluminum, ICP, Dry ash (ppm)	6	6	269.9	41.46	271.9	42.16	21.51	15.50%	17.67	6.88%
015.53	Aluminum, ICP-MS, Microwave (ppm)	3	3	323.9	10.60	323.9	10.60	6.119	3.27%	11.79	6.70%
015.42	Aluminum, ICP, Open vessel (ppm)	2	2	198.5	64.42						
017.43	Boron, ICP, Microwave (ppm)	7	7	13.87	4.490	14.41	3.778	1.785	26.22%	0.5149	10.71%
017.42	Boron, ICP, Open vessel (ppm)	6	6	12.41	3.426	12.72	3.135	1.600	24.64%	0.4332	10.91%

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017.41	Boron, ICP, Dry ash (ppm)	5	5	13.67	1.681	13.67	1.681	0.7519	12.30%	0.3924	10.79%
017.44	Boron, ICP, Dry ash (ppm)	1	1	6.610							
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	14.88							
019.43	Calcium, ICP, Microwave (%)	37	36	5.127	0.2376	5.112	0.1891	0.0394	3.70%	0.1204	3.13%
019.41	Calcium, ICP, Dry ash (%)	23	23	5.213	0.6288	5.280	0.4006	0.1044	7.59%	0.0824	3.11%
019.42	Calcium, ICP, Open vessel (%)	18	18	5.242	0.2905	5.241	0.2766	0.0815	5.28%	0.1726	3.12%
019.31	Calcium, AAS, Dry ash (%)	17	17	5.124	0.2291	5.148	0.2028	0.0615	3.94%	0.0822	3.13%
019.08	Calcium, EDTA (%)	12	11	5.172	0.1398	5.168	0.1027	0.0387	1.99%	0.0220	3.12%
019.53	Calcium, ICP-MS, Microwave (%)	5	5	4.777	0.6000	4.777	0.6000	0.2683	12.56%	0.2435	3.16%
019.00	Calcium, Ox-Mn04 Vol. (%)	4	4	5.032	0.4145	5.032	0.4145	0.2072	8.24%	0.0553	3.14%
019.99	Calcium, Miscellaneous (%)	4	4	5.030	0.3085	5.030	0.3085	0.1542	6.13%	0.2425	3.14%
019.03	Calcium, Semiauto (Autoanalyzer) (%)	1	1	5.226							
019.09	Calcium, Ion-selective electrode (%)	1	1	5.337							
019.32	Calcium, AAS, Open vessel (%)	1	1	5.235							
019.33	Calcium, AAS, Microwave (%)	1	1	5.570							
019.44	Calcium, ICP, Dry ash (%)	1	1	4.525							
019.52	Calcium, ICP-MS, Open vessel (%)	1	1	4.270							
021.43	Cobalt, ICP, Microwave (ppm)	11	10	5.510	1.356	5.351	1.065	0.4208	19.89%	0.3760	12.43%
021.53	Cobalt, ICP-MS, Microwave (ppm)	7	7	5.309	0.6334	5.440	0.3736	0.1765	6.87%	0.3418	12.40%
021.41	Cobalt, ICP, Dry ash (ppm)	6	6	3.987	1.273	3.987	1.443	0.7364	36.19%	0.1383	12.99%
021.42	Cobalt, ICP, Open vessel (ppm)	2	2	4.385	0.1701						
021.52	Cobalt, ICP-MS, Open vessel (ppm)	2	2	4.648	0.5268						
021.31	Cobalt, AAS, Dry ash (ppm)	1	1	5.550							
021.99	Cobalt, Miscellaneous (ppm)	1	1	4.550							
022.43	Copper, ICP, Microwave (ppm)	26	25	12.00	2.128	11.72	1.719	0.4299	14.67%	0.4743	11.04%
022.42	Copper, ICP, Open vessel (ppm)	19	18	11.71	1.221	11.76	1.189	0.3503	10.11%	0.2654	11.04%
022.41	Copper, ICP, Dry ash (ppm)	16	16	14.18	4.416	13.24	2.550	0.7970	19.27%	0.7985	10.84%
022.31	Copper, AAS, Dry ash (ppm)	7	7	12.08	5.678	12.08	6.439	3.042	53.29%	1.469	10.99%
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	11.46	0.6559	11.46	0.6559	0.2933	5.72%	0.6655	11.08%
022.33	Copper, AAS, Microwave (ppm)	3	3	11.77	7.913	11.77	7.913	4.568	67.23%	1.567	11.04%
022.99	Copper, Miscellaneous (ppm)	3	3	9.933	1.677	9.933	1.677	1.186	16.89%	0.1333	11.32%
022.32	Copper, AAS, Open vessel (ppm)	1	1	10.15							
022.44	Copper, ICP, Dry ash (ppm)	1	1	11.00							
024.52	Iodine, ICP-MS, Open vessel (ppm)	1	1	16.87							
024.99	Iodine, Miscellaneous (ppm)	1	1	10.03							
025.43	Iron, ICP, Microwave (ppm)	24	24	517.3	46.67	515.5	46.97	11.98	9.11%	16.02	6.25%
025.41	Iron, ICP, Dry ash (ppm)	18	18	511.9	41.10	511.6	40.06	11.80	7.83%	16.39	6.26%
025.42	Iron, ICP, Open vessel (ppm)	16	15	428.8	102.8	446.7	74.96	24.19	16.78%	14.64	6.39%
025.31	Iron, AAS, Dry ash (ppm)	8	7	519.5	43.93	519.8	44.95	21.24	8.65%	10.91	6.24%
025.53	Iron, ICP-MS, Microwave (ppm)	4	4	514.0	129.0	514.0	129.0	64.50	25.10%	36.92	6.25%

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025.33	Iron, AAS, Microwave (ppm)	1	1	256.4							
025.99	Iron, Miscellaneous (ppm)	1	1	506.5							
027.43	Magnesium, ICP, Microwave (%)	31	30	0.7902	0.0559	0.7910	0.0506	0.0115	6.39%	0.0202	4.14%
027.41	Magnesium, ICP, Dry ash (%)	20	20	0.8051	0.0999	0.8191	0.0645	0.0180	7.88%	0.0192	4.12%
027.42	Magnesium, ICP, Open vessel (%)	19	19	0.8178	0.0518	0.8146	0.0506	0.0145	6.21%	0.0188	4.13%
027.31	Magnesium, AAS, Dry ash (%)	8	7	0.8075	0.0452	0.8118	0.0409	0.0193	5.04%	0.0117	4.13%
027.53	Magnesium, ICP-MS, Microwave (%)	5	5	0.7813	0.0625	0.7813	0.0625	0.0280	8.00%	0.0611	4.15%
027.99	Magnesium, Miscellaneous (%)	5	5	0.8030	0.1308	0.8030	0.1308	0.0585	16.28%	0.0100	4.13%
027.33	Magnesium, AAS, Microwave (%)	4	3	0.7927	0.0158	0.7927	0.0158	0.0091	1.99%	0.0340	4.14%
027.44	Magnesium, ICP, Dry ash (%)	2	2	0.7790	0.0792						
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.6400							
027.52	Magnesium, ICP-MS, Open vessel (%)	1	1	0.5000							
028.43	Manganese, ICP, Microwave (ppm)	31	30	470.1	35.08	472.1	32.80	7.485	6.95%	13.84	6.33%
028.42	Manganese, ICP, Open vessel (ppm)	20	20	469.1	33.23	470.1	35.27	9.858	7.50%	20.20	6.34%
028.41	Manganese, ICP, Dry ash (ppm)	18	18	466.8	44.22	469.9	41.93	12.35	8.92%	10.04	6.34%
028.31	Manganese, AAS, Dry ash (ppm)	8	8	471.0	15.72	471.0	17.83	7.880	3.79%	8.152	6.33%
028.53	Manganese, ICP-MS, Microwave (ppm)	6	6	469.5	44.63	469.5	50.61	25.83	10.78%	34.44	6.34%
028.99	Manganese, Miscellaneous (ppm)	4	4	408.6	97.26	408.6	97.26	48.63	23.80%	20.25	6.47%
028.44	Manganese, ICP, Dry ash (ppm)	3	3	474.1	34.48	474.1	34.48	19.91	7.27%	16.70	6.33%
028.33	Manganese, AAS, Microwave (ppm)	2	2	1,576	1,646						
028.32	Manganese, AAS, Open vessel (ppm)	1	1	482.0							
031.43	Phosphorus, ICP, Microwave (%)	34	32	1.628	0.0980	1.632	0.0981	0.0217	6.01%	0.0454	3.72%
031.01	Phosphorus, Photometric (%)	31	30	1.585	0.1496	1.611	0.0804	0.0184	4.99%	0.0296	3.72%
031.41	Phosphorus, ICP, Dry ash (%)	23	22	1.607	0.1962	1.634	0.1285	0.0342	7.87%	0.0260	3.71%
031.42	Phosphorus, ICP, Open vessel (%)	18	18	1.593	0.1466	1.613	0.1024	0.0302	6.35%	0.0515	3.72%
031.53	Phosphorus, ICP-MS, Microwave (%)	5	5	1.647	0.2209	1.647	0.2209	0.0988	13.41%	0.1395	3.71%
031.99	Phosphorus, Miscellaneous (%)	3	3	1.447	0.2984	1.447	0.2984	0.1723	20.63%	0.0533	3.78%
031.03	Phosphorus, Autoanalyzer (%)	2	2	1.698	0.0804						
031.44	Phosphorus, ICP, Dry ash (%)	2	2	1.593	0.2376						
031.06	Phosphorus, Hach Method (%)	1	1	1.600							
032.43	Potassium, ICP, Microwave (%)	24	22	1.337	0.0429	1.336	0.0332	0.0088	2.48%	0.0194	3.83%
032.41	Potassium, ICP, Dry ash (%)	18	17	1.339	0.1889	1.358	0.1045	0.0317	7.69%	0.0246	3.82%
032.42	Potassium, ICP, Open vessel (%)	15	14	1.380	0.0595	1.380	0.0248	0.0083	1.80%	0.0317	3.81%
032.31	Potassium, AAS, Dry ash (%)	7	7	1.298	0.0756	1.298	0.0857	0.0405	6.60%	0.0405	3.85%
032.99	Potassium, Miscellaneous (%)	5	5	1.230	0.1640	1.230	0.1640	0.0733	13.33%	0.0240	3.88%
032.53	Potassium, ICP-MS, Microwave (%)	4	4	1.283	0.1261	1.283	0.1261	0.0631	9.83%	0.0896	3.85%
032.52	Potassium, ICP-MS, Open vessel (%)	2	2	1.388	0.1096						
032.08	Potassium, Ion-selective electrode (%)	1	1	1.280							
032.32	Potassium, AAS, Open vessel (%)	1	1	1.035							
032.33	Potassium, AAS, Microwave (%)	1	1	1.185							

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032.44	Potassium, ICP, Dry ash (%)	1	1	1.260							
033.01	Salt as chloride, Poten Cl (%)	31	29	4.759	0.1136	4.748	0.0857	0.0199	1.80%	0.0473	3.16%
033.00	Salt as chloride, Sol Cl (%)	21	20	4.494	0.4578	4.594	0.1914	0.0535	4.17%	0.0590	3.18%
033.99	Salt, Miscellaneous (%)	8	8	4.278	0.6187	4.278	0.7017	0.3101	16.40%	0.0819	3.21%
033.03	Salt as chloride, Quantab (%)	6	6	4.808	0.2124	4.808	0.2408	0.1229	5.01%	0.0950	3.16%
033.05	Salt as chloride, Ion Sel Electrode (%)	4	3	4.265	0.7649	4.265	0.7649	0.4416	17.93%	0.0300	3.22%
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	13	13	6.646	0.8853	6.576	0.8426	0.2921	12.81%	0.3380	12.05%
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	9	8	6.629	1.321	6.649	1.454	0.6425	21.86%	0.1590	12.03%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	4	4	5.720	0.4775	5.720	0.4775	0.2388	8.35%	0.2655	12.30%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	2	2	6.355	0.9263						
034.99	Selenium, Total (Se), Miscellaneous (ppm)	3	2	5.853	2.932	5.853	2.932			0.1160	12.26%
034.01	Selenium, Total (Se), Fluor (ppm)	1	1	6.175							
034.34	Selenium, Total (Se), AAS, Graphite furnace (ppm)	1	1	31.13							
034.41	Selenium, Total (Se), ICP, Dry ash (ppm)	1	1	5.610							
034.42	Selenium, Total (Se), ICP, Open vessel (ppm)	1	1	6.375							
035.43	Sodium, ICP, Microwave (%)	26	25	1.525	0.1232	1.518	0.1074	0.0269	7.08%	0.0410	3.76%
035.41	Sodium, ICP, Dry ash (%)	20	20	1.467	0.1927	1.485	0.1216	0.0340	8.19%	0.0320	3.77%
035.42	Sodium, ICP, Open vessel (%)	16	15	1.581	0.1325	1.579	0.1090	0.0352	6.91%	0.0510	3.73%
035.31	Sodium, AAS, Dry ash (%)	12	11	1.524	0.0868	1.527	0.0912	0.0344	5.98%	0.0168	3.75%
035.53	Sodium, ICP-MS, Microwave (%)	5	5	1.474	0.1345	1.474	0.1345	0.0602	9.13%	0.1204	3.77%
035.99	Sodium, Miscellaneous (%)	5	5	1.583	1.092	1.583	1.092	0.4883	68.97%	0.0180	3.73%
035.01	Sodium, Ion-selective electrode (%)	2	2	1.751	0.1969						
035.05	Sodium, Flame Emission (%)	1	1	3.465							
035.32	Sodium, AAS, Open vessel (%)	1	1	1.160							
035.33	Sodium, AAS, Microwave (%)	1	1	1.550							
036.42	Sulfur, ICP, Open vessel (%)	19	19	0.4621	0.0463	0.4603	0.0267	0.0077	5.81%	0.0164	4.50%
036.43	Sulfur, ICP, Microwave (%)	16	15	0.4878	0.0375	0.4887	0.0399	0.0129	8.16%	0.0102	4.45%
036.04	Sulfur, LECO (%)	3	3	0.4594	0.0235	0.4594	0.0235	0.0136	5.11%	0.0094	4.50%
036.99	Sulfur, Miscellaneous (%)	2	2	0.3825	0.0318						
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.4580							
037.43	Zinc, ICP, Microwave (ppm)	31	30	1,115	85.55	1,120	82.33	18.79	7.35%	32.38	5.56%
037.41	Zinc, ICP, Dry ash (ppm)	19	19	1,084	117.3	1,083	119.5	34.28	11.04%	32.74	5.59%
037.42	Zinc, ICP, Open vessel (ppm)	19	18	1,111	111.5	1,112	115.0	33.88	10.34%	29.54	5.57%
037.31	Zinc, AAS, Dry ash (ppm)	8	8	1,124	79.24	1,133	66.58	29.42	5.88%	25.56	5.55%
037.53	Zinc, ICP-MS, Microwave (ppm)	6	6	1,089	110.7	1,089	125.6	64.07	11.53%	69.52	5.58%
037.33	Zinc, AAS, Microwave (ppm)	4	4	1,020	623.8	1,020	623.8	311.9	61.15%	42.51	5.64%
037.99	Zinc, Miscellaneous (ppm)	4	4	1,025	111.4	1,025	111.4	55.71	10.87%	46.22	5.64%
037.44	Zinc, ICP, Dry ash (ppm)	3	3	1,070	79.70	1,070	79.70	46.01	7.45%	111.9	5.60%
037.32	Zinc, AAS, Open vessel (ppm)	1	1	1,175							
037.52	Zinc, ICP-MS, Open vessel (ppm)	1	1	1,093							

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038.43	Molybdenum, ICP, Microwave (ppm)	7	6	10.83	2.324	10.83	2.636	1.345	24.34%	0.4718	11.18%
038.41	Molybdenum, ICP, Dry ash (ppm)	4	4	9.420	2.942	9.420	2.942	1.471	31.23%	0.1760	11.41%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	5	4	13.67	0.4117	13.67	0.4117	0.2059	3.01%	1.870	10.79%
038.42	Molybdenum, ICP, Open vessel (ppm)	4	3	11.80	1.841	11.80	1.841	1.063	15.60%	0.2163	11.03%
040.53	Barium, ICP-MS, Microwave (ppm)	2	2	8.858	1.546						
041.53	Vanadium, ICP-MS, Microwave (ppm)	2	2	4.534	0.4296						
042.00	Chloride, Titrimetric (%)	3	3	2.892	0.0355	2.892	0.0355	0.0205	1.23%	0.0100	3.41%
042.01	Chloride, Ion-selective electrode (%)	1	1	2.610							
042.99	Chloride, Miscellaneous (%)	1	1	2.965							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	2,005							
102.01	Niacin, Microbiological (ppm)	1	1	43.80							
102.02	Niacin, LC (ppm)	1	1	43.28							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	7.910							
104.00	Riboflavin, Fluorometric (ppm)	1	1	3.485							
105.01	Thiamine, Fluorometer (ppm)	1	1	4.640							
106.02	Vitamin A, LC (KU / kg)	14	13	49.69	8.795	49.69	9.974	3.458	20.07%	5.106	
106.00	Vitamin A, Color (KU / kg)	2	2	56.43	4.985						
106.01	Vitamin A, UV (KU / kg)	1	1	44.00							
107.00	Vitamin B12, Microbiological (ppb)	1	1	11.75							
108.02	Vitamin D3, LC (KU / kg)	4	4	6.535	1.292	6.535	1.292	0.6462	19.78%	1.095	
108.99	Vitamin D3, Miscellaneous (KU / kg)	1	1	6.345							
109.02	Vitamin E, LC (IU / kg)	19	18	228.0	34.85	227.3	35.70	10.52	15.71%	8.131	
109.99	Vitamin E, Miscellaneous (IU / kg)	1	1	216.0							
111.00	Vitamin C, Phosphorylated, LC (ppm)	1	1	4.400							
112.01	Pyridoxine, LC (µg / g)	1	1	2.805							
113.01	Folic Acid, Micro (ppm)	1	1	1.625							
114.01	Biotin, Microbiological (ppm)	1	1	0.3765							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	1	1	5.280							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	28.00							
120.00	Alanine, Post-col Ninhydrin Der (%)	14	13	1.315	0.0861	1.303	0.0433	0.0150	3.32%	0.0157	3.84%
120.05	Alanine, Pre-col AQC Der (%)	8	8	1.293	0.0754	1.287	0.0722	0.0319	5.61%	0.0200	3.85%
120.99	Alanine, Miscellaneous (%)	2	2	1.438	0.1662						
120.02	Alanine, Post-col OPA Der (%)	1	1	1.299							
121.00	Arginine, Post-col Ninhydrin Der (%)	14	14	2.865	0.1806	2.836	0.1011	0.0338	3.57%	0.0371	3.42%
121.05	Arginine, Pre-col AQC Der (%)	8	8	2.857	0.2510	2.807	0.1511	0.0668	5.38%	0.0566	3.42%
121.99	Arginine, Miscellaneous (%)	2	2	2.515	0.3041						
121.02	Arginine, Post-col OPA Der (%)	1	1	2.747							
122.00	Aspartic, Post-col Ninhydrin Der (%)	14	14	2.746	0.1986	2.715	0.0821	0.0274	3.02%	0.0319	3.44%
122.05	Aspartic, Pre-col AQC Der (%)	7	7	2.809	0.4146	2.710	0.2037	0.0962	7.52%	0.0717	3.44%
122.99	Aspartic, Miscellaneous (%)	2	2	2.570	0.2334						

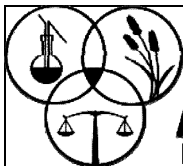
Method Code	Analyte and Method	Total # Labs Submitting	# Labs in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO ffp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (R-bar)	Thompson Horwitz %RSD
122.02	Aspartic, Post-col OPA Der (%)	1	1	2.695							
124.00	Cysteine/Cystine, PAO Post-col Ninhydri (%)	14	14	0.4574	0.0267	0.4567	0.0288	0.0096	6.31%	0.0101	4.50%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	6	6	0.3958	0.0674	0.3958	0.0765	0.0390	19.32%	0.0111	4.60%
124.99	Cysteine/Cystine, Miscellaneous (%)	2	2	0.4025	0.0813						
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.4740							
125.00	Glutamic, Post-col Ninhydrin Der (%)	14	14	5.544	0.3769	5.468	0.1670	0.0558	3.05%	0.0656	3.10%
125.05	Glutamic, Pre-col AQC Der (%)	8	8	5.520	0.2947	5.480	0.2319	0.1025	4.23%	0.1440	3.10%
125.99	Glutamic, Miscellaneous (%)	2	2	5.360	0.0566						
125.02	Glutamic, Post-col OPA Der (%)	1	1	5.376							
126.00	Glycine, Post-col Ninhydrin Der (%)	14	14	1.500	0.0811	1.484	0.0347	0.0116	2.34%	0.0238	3.77%
126.05	Glycine, Pre-col AQC Der (%)	8	8	1.513	0.1354	1.498	0.1186	0.0524	7.92%	0.0261	3.76%
126.99	Glycine, Miscellaneous (%)	2	2	1.040	0.6718						
126.02	Glycine, Post-col OPA Der (%)	1	1	1.507							
127.00	Histidine, Post-col Ninhydrin Der (%)	14	14	0.7793	0.0421	0.7786	0.0330	0.0110	4.24%	0.0143	4.15%
127.05	Histidine, Pre-col AQC Der (%)	8	8	0.8116	0.0468	0.8116	0.0530	0.0234	6.54%	0.0256	4.13%
127.99	Histidine, Miscellaneous (%)	2	2	0.6775	0.1591						
127.02	Histidine, Post-col OPA Der (%)	1	1	0.7640							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	14	14	0.9995	0.0682	0.9963	0.0665	0.0222	6.67%	0.0214	4.00%
128.05	Isoleucine, Pre-col AQC Der (%)	8	8	1.010	0.1528	1.016	0.1454	0.0643	14.32%	0.0185	3.99%
128.99	Isoleucine, Miscellaneous (%)	2	2	0.9650	0.1273						
128.02	Isoleucine, Post-col OPA Der (%)	1	1	1.001							
129.00	Leucine, Post-col Ninhydrin Der (%)	14	13	1.863	0.0965	1.848	0.0355	0.0123	1.92%	0.0164	3.65%
129.05	Leucine, Pre-col AQC Der (%)	8	8	1.837	0.1561	1.815	0.1131	0.0500	6.23%	0.0226	3.66%
129.99	Leucine, Miscellaneous (%)	2	2	1.608	0.3995						
129.02	Leucine, Post-col OPA Der (%)	1	1	1.856							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	14	14	1.406	0.0908	1.401	0.0901	0.0301	6.43%	0.0258	3.80%
130.05	L-Lysine, Pre-col AQC Der (%)	8	8	1.396	0.1165	1.376	0.0798	0.0353	5.80%	0.0461	3.81%
130.99	L-Lysine, Miscellaneous (%)	2	2	1.403	0.0813						
130.02	L-Lysine, Post-col OPA Der (%)	1	1	1.458							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	14	14	0.3810	0.0309	0.3791	0.0276	0.0092	7.29%	0.0093	4.63%
131.05	Methionine, PAO Pre-col AQC Der (%)	7	6	0.4128	0.0227	0.4128	0.0257	0.0131	6.23%	0.0067	4.57%
131.99	Methionine, Miscellaneous (%)	2	2	0.4350	0.0919						
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.3845							
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	14	14	1.476	0.0771	1.460	0.0462	0.0154	3.17%	0.0202	3.78%
132.05	Phenylalanine, Pre-col AQC Der (%)	8	8	1.506	0.0721	1.506	0.0818	0.0361	5.43%	0.0443	3.76%
132.99	Phenylalanine, Miscellaneous (%)	2	2	1.355	0.1839						
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	1.447							
133.00	Proline, Post-col Ninhydrin Der (%)	14	14	1.366	0.0938	1.352	0.0635	0.0212	4.70%	0.0326	3.82%
133.05	Proline, Pre-col AQC Der (%)	8	7	1.395	0.1076	1.393	0.1162	0.0549	8.35%	0.0166	3.81%
133.99	Proline, Miscellaneous (%)	2	2	1.540	0.2263						

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134.00	Serine, Post-col Ninhydrin Der (%)	14	14	1.310	0.1189	1.302	0.1098	0.0367	8.43%	0.0276	3.84%
134.05	Serine, Pre-col AQC Der (%)	8	8	1.323	0.1598	1.344	0.1285	0.0568	9.56%	0.0301	3.83%
134.99	Serine, Miscellaneous (%)	2	2	1.423	0.2227						
134.02	Serine, Post-col OPA Der (%)	1	1	1.275							
135.00	Threonine, Post-col Ninhydrin Der (%)	14	13	1.010	0.0871	1.004	0.0468	0.0162	4.66%	0.0147	4.00%
135.05	Threonine, Pre-col AQC Der (%)	8	8	0.9944	0.0978	0.9981	0.0646	0.0286	6.48%	0.0256	4.00%
135.99	Threonine, Miscellaneous (%)	2	2	1.083	0.1237						
135.02	Threonine, Post-col OPA Der (%)	1	1	0.9845							
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	4	4	0.4769	0.0778	0.4769	0.0778	0.0389	16.32%	0.0122	4.47%
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	4	4	0.3634	0.0064	0.3634	0.0064	0.0032	1.76%	0.0115	4.66%
136.05	Tryptophan, Pre-col AQC Der (%)	3	3	0.2645	0.1598	0.2645	0.1598	0.1130	60.41%	0.0083	4.89%
136.99	Tryptophan, Miscellaneous (%)	2	2	0.4775	0.2581						
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	1	1	0.3675							
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.3495							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	12	12	0.8299	0.1282	0.8373	0.1057	0.0382	12.63%	0.0178	4.11%
137.05	Tyrosine, Pre-col AQC Der (%)	8	8	0.8685	0.1051	0.8619	0.1037	0.0458	12.03%	0.0103	4.09%
137.99	Tyrosine, Miscellaneous (%)	2	2	0.7400	0.1131						
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.8360							
138.00	Valine, Post-col Ninhydrin Der (%)	14	14	1.305	0.1012	1.297	0.0596	0.0199	4.60%	0.0290	3.85%
138.05	Valine, Pre-col AQC Der (%)	8	8	1.310	0.1600	1.309	0.1467	0.0648	11.21%	0.0279	3.84%
138.99	Valine, Miscellaneous (%)	2	2	1.300	0.1626						
138.02	Valine, Post-col OPA Der (%)	1	1	1.338							
139.00	Taurine, Post-col Ninhydrin Der (%)	1	1	0.0900							
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0965							
139.99	Taurine, Miscellaneous (%)	2	1	0.1100							
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
160.10	Fructose, HPAEC PAD (%)	1	1	0.0400							
160.99	Fructose, Miscellaneous (%)	3									
161.10	Galactose, HPAEC PAD (%)	1		0.0000							
162.10	Glucose, HPAEC PAD (%)	1		0.0000							
162.99	Glucose, Miscellaneous (%)	3									
163.10	Lactose, HPAEC PAD (%)	1		0.0000							
163.99	Lactose, Miscellaneous (%)	2		0.0000							
164.10	Maltose, HPAEC PAD (%)	1	1	0.1015							
164.99	Maltose, Miscellaneous (%)	2		0.0000							
165.99	Sucrose, Miscellaneous (%)	3	2	1.795	0.1131	1.795	0.1131			0.0700	3.66%
165.10	Sucrose, HPAEC PAD (%)	1	1	1.571							
166.10	Raffinose, HPAEC PAD (%)	1	1	2.369							
166.99	Raffinose, Miscellaneous (%)	1	1	2.060							
167.10	Stachyose, HPAEC PAD (%)	1	1	0.9980							

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167.99	Stachyose, Miscellaneous (%)	1	1	1.075							
357.02	Ethoxyquin, LC (UV or FL) (ppm)	1		0.0000							
361.02	Lasalocid Sodium, LC (ppm)	9	8	114.0	11.62	112.5	7.166	3.167	6.37%	2.085	7.86%
361.03	Lasalocid Sodium, LC (UV or FL) (ppm)	8	7	106.8	10.39	106.8	11.78	5.567	11.03%	1.806	7.92%
361.05	Lasalocid Sodium, LC-MS/MS (ppm)	2	2	112.3	13.79						
400.01	Water Activity, Aqualab chilled mirror (Units)	12	12	0.5417	0.0332	0.5489	0.0140	0.0051	2.56%	0.0034	
400.99	Water Activity, Miscellaneous (Units)	2	2	0.5473	0.0011						
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	7	6	0.1546	0.0332	0.1546	0.0377	0.0192	24.39%	0.0135	21.19%
516.00	Arsenic, Total (As), AA, Hydride (ppm)	2	2	0.1158	0.0039						
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		10.00							
518.53	Cadmium, ICP-MS, Microwave (ppm)	7	7	0.1708	0.0230	0.1708	0.0128	0.0060	7.49%	0.0137	20.87%
518.41	Cadmium, ICP, Dry ash (ppm)	2	2	0.1366	0.0298						
518.43	Cadmium, ICP, Microwave (ppm)	2	2	0.1982	0.1016						
518.34	Cadmium, AAS, Graphite furnace (ppm)	1	1	0.1630							
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	6	6	6.031	1.734	6.031	1.966	1.003	32.59%	0.6067	12.21%
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	3	3	4.254	1.760	4.254	1.760	1.016	41.38%	0.1001	12.86%
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	4	3	5.806	1.415	5.806	1.415	0.8169	24.37%	0.0303	12.28%
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	2	2	5.830	0.7145						
526.53	Lead, ICP-MS, Microwave (ppm)	7	7	0.4219	0.0283	0.4219	0.0321	0.0151	7.60%	0.0545	18.22%
526.41	Lead, ICP, Dry ash (ppm)	2	2	0.2843	0.1630						
526.43	Lead, ICP, Microwave (ppm)	2	2	1.828	1.756						
526.34	Lead, AAS, Graphite furnace (ppm)	1	1	0.1155							
529.99	Mercury, Miscellaneous (ppb)	5	2	2.557	0.6478	2.557	0.6478			0.2403	22.00%
539.53	Nickel, ICP-MS, Microwave (ppm)	4	4	7.740	1.081	7.740	1.081	0.5406	13.97%	1.026	11.76%
539.41	Nickel, ICP, Dry ash (ppm)	2	2	4.590	0.7974						
539.43	Nickel, ICP, Microwave (ppm)	2	2	6.285	1.690						
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	2		0.0050							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	1	1	0.0328							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	1	1	0.9670							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	2	2	0.0352	0.0004						
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.3430							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	1	1	0.9464							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	2	2	1.302	0.0704						
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	2	2	0.0526	0.0023						
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	1	1	0.0133							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0195							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	1	1	0.0050							
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))	1	1	0.0093							
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1		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		0.0000							
748.99	Lignoceric Acid (24:0), Miscellaneous (%) (w/w)	1	1	0.0076							
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)	1		0.0050							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (%) (w/w)	1	1	0.0500							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (%) (w/w)	1	1	1.270							
772.99	Total Fatty Acids, Miscellaneous (%) (w/w)	1	1	3.780							

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

Sheep Feed, Medicated

Test Material Code # 202128

Methods Reported: 141

Labs Reporting: 172

Issue Date : 09/30/2021

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
001.00	Loss on Drying, Vac 95°C 5 hr (%)	5	5	8.263	0.3431	0.3412	0.0497	0.3448	4.13%	0.60%	4.17%	6.945
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	53	48	8.195	0.3531	0.2096	0.0878	0.2273	2.54%	1.07%	2.76%	2.589
001.99	Loss on Drying, Miscellaneous (%)	18	16	8.070	0.5235	0.4963	0.0509	0.4989	6.11%	0.63%	6.14%	9.794
002.01	Protein, Crude, Auto Kjel-Foss (%)	15	13	34.34	0.5715	0.2202	0.0929	0.2390	0.64%	0.27%	0.70%	2.572
002.05	Protein, Crude, Copper, Boric Acid (%)	23	20	34.01	1.176	0.3130	0.1616	0.3523	0.92%	0.47%	1.03%	2.180
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	119	110	34.68	0.5266	0.3380	0.2063	0.3960	0.97%	0.59%	1.14%	1.920
002.11	Protein, Crude, NIR (%)	6	6	39.00	1.561	1.557	0.1553	1.565	3.99%	0.40%	4.01%	10.07
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	12	11	4.041	0.4716	0.4688	0.0729	0.4744	11.60%	1.80%	11.74%	6.509
003.06	Fat, Crude, Pet Ether (%)	16	15	3.947	0.3747	0.2694	0.0484	0.2737	6.94%	1.25%	7.06%	5.659
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	12	11	4.091	0.4996	0.3305	0.0963	0.3443	8.30%	2.42%	8.65%	3.574
003.10	Fat, Crude, Randall, Pet Ether (%)	28	27	3.761	0.2777	0.2728	0.1026	0.2914	7.25%	2.72%	7.74%	2.842
003.11	Fat, Crude, NIR (%)	6	5	4.768	1.138	0.5799	0.0539	0.5824	13.32%	1.24%	13.38%	10.81
003.13	Fat, Crude, Randall, Hexane Ext. (%)	6	5	3.821	0.6020	0.1755	0.0857	0.1953	4.33%	2.11%	4.81%	2.279
003.14	Fat, Crude, Ankom (%)	48	46	3.868	0.3738	0.3024	0.0906	0.3157	7.88%	2.36%	8.23%	3.483
004.00	Fiber, Crude, Asbestos Free (%)	13	13	8.052	0.9887	0.9595	0.3370	1.017	11.92%	4.19%	12.63%	3.018
004.06	Fiber, Crude, Fibertec (%)	18	17	7.100	0.4714	0.4747	0.1450	0.4964	6.69%	2.04%	6.99%	3.424
004.07	Fiber, Crude, ANKOM (%)	70	65	8.887	1.286	1.256	0.2633	1.284	14.17%	2.97%	14.48%	4.876
004.11	Fiber, Crude, NIR (%)	5	5	10.91	4.735	4.733	0.1883	4.737	43.39%	1.73%	43.42%	25.15
005.00	Ash, 2h @ 600°C (%)	89	85	21.45	0.7995	0.7821	0.2178	0.8119	3.64%	1.01%	3.78%	3.728
005.05	Ash, 3h @ 550°C (%)	28	23	22.11	0.4942	0.3814	0.1885	0.4254	1.72%	0.85%	1.92%	2.257
005.99	Ash, Miscellaneous (%)	8	8	22.06	1.072	1.067	0.1542	1.078	4.84%	0.70%	4.89%	6.990
008.02	Fiber, Acid Detergent, Crucible (%)	14	14	9.991	0.5165	0.4987	0.1904	0.5338	4.99%	1.91%	5.34%	2.804
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	43	38	10.92	2.417	0.6322	0.2866	0.6942	6.12%	2.78%	6.72%	2.422
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	14	12	18.63	1.665	1.183	0.4945	1.283	6.47%	2.71%	7.02%	2.594
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	42	38	19.32	2.868	1.895	0.4518	1.948	10.07%	2.40%	10.35%	4.311
010.99	Moisture, Miscellaneous (%)	16	13	7.979	1.093	0.2904	0.1004	0.3072	3.55%	1.23%	3.76%	3.061
011.01	Loss on Drying, HT, 135°C 2hr (%)	65	60	9.336	0.3535	0.2996	0.1000	0.3158	3.22%	1.07%	3.39%	3.159
012.00	Starch, Polarimetric (Ewers) (%)	8	7	3.499	0.3865	0.3809	0.0930	0.3920	10.89%	2.66%	11.21%	4.217
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	9	9	3.370	0.6485	0.6454	0.0893	0.6516	19.15%	2.65%	19.33%	7.296
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	5	5	3.846	1.072	1.052	0.2905	1.092	27.36%	7.55%	28.38%	3.758
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	17	16	4.753	0.6132	0.6099	0.0894	0.6165	12.83%	1.88%	12.97%	6.895
013.02	Fat, Acid Pretreat, Mojonner, Bak Ext (%)	16	13	5.196	0.7238	0.5027	0.1528	0.5253	9.32%	2.83%	9.74%	3.439
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	6	6	4.295	0.4845	0.4692	0.1709	0.4993	10.92%	3.98%	11.63%	2.922
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	7	7	5.120	0.3682	0.3103	0.2802	0.4182	6.06%	5.47%	8.17%	1.492
015.41	Aluminum, ICP, Dry ash (ppm)	6	6	269.9	41.46	40.10	14.87	42.77	14.86%	5.51%	15.85%	2.876
015.43	Aluminum, ICP, Microwave (ppm)	7	7	293.1	39.95	39.19	10.95	40.69	13.37%	3.74%	13.88%	3.716

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
017.41	Boron, ICP, Dry ash (ppm)	5	5	13.67	1.681	1.663	0.3506	1.699	12.16%	2.56%	12.43%	4.847
017.42	Boron, ICP, Open vessel (ppm)	6	6	12.41	3.426	3.415	0.3913	3.437	27.52%	3.15%	27.70%	8.784
017.43	Boron, ICP, Microwave (ppm)	7	6	13.87	4.490	4.492	0.2870	4.502	34.07%	2.18%	34.14%	15.68
019.08	Calcium, EDTA (%)	12	11	5.172	0.1398	0.1388	0.0231	0.1407	2.68%	0.45%	2.72%	6.082
019.31	Calcium, AAS, Dry ash (%)	17	16	5.124	0.2291	0.2178	0.0685	0.2283	4.27%	1.34%	4.47%	3.332
019.41	Calcium, ICP, Dry ash (%)	23	20	5.213	0.6288	0.3667	0.0609	0.3717	6.86%	1.14%	6.95%	6.100
019.42	Calcium, ICP, Open vessel (%)	18	18	5.242	0.2905	0.2605	0.1818	0.3177	4.97%	3.47%	6.06%	1.747
019.43	Calcium, ICP, Microwave (%)	37	33	5.127	0.2376	0.1684	0.0888	0.1904	3.31%	1.74%	3.74%	2.144
019.53	Calcium, ICP-MS, Microwave (%)	5	5	4.777	0.6000	0.5829	0.2012	0.6167	12.20%	4.21%	12.91%	3.064
021.41	Cobalt, ICP, Dry ash (ppm)	6	5	3.987	1.273	1.387	0.0663	1.388	35.81%	1.71%	35.85%	20.94
021.43	Cobalt, ICP, Microwave (ppm)	11	9	5.510	1.356	0.8156	0.2090	0.8419	15.81%	4.05%	16.32%	4.028
021.53	Cobalt, ICP-MS, Microwave (ppm)	7	6	5.309	0.6334	0.1992	0.1859	0.2725	3.60%	3.36%	4.92%	1.466
022.31	Copper, AAS, Dry ash (ppm)	7	7	12.08	5.678	5.549	1.703	5.804	45.93%	14.09%	48.04%	3.409
022.41	Copper, ICP, Dry ash (ppm)	16	14	14.18	4.416	3.571	0.6369	3.628	26.52%	4.73%	26.94%	5.696
022.42	Copper, ICP, Open vessel (ppm)	19	17	11.71	1.221	1.114	0.2010	1.132	9.41%	1.70%	9.56%	5.631
022.43	Copper, ICP, Microwave (ppm)	26	24	12.00	2.128	2.150	0.4559	2.198	17.92%	3.80%	18.32%	4.821
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	11.46	0.6559	0.5027	0.5957	0.7795	4.39%	5.20%	6.80%	1.308
025.31	Iron, AAS, Dry ash (ppm)	8	7	519.5	43.93	43.43	9.288	44.42	8.36%	1.79%	8.55%	4.782
025.41	Iron, ICP, Dry ash (ppm)	18	18	511.9	41.10	39.39	16.59	42.74	7.69%	3.24%	8.35%	2.577
025.42	Iron, ICP, Open vessel (ppm)	16	14	428.8	102.8	77.71	13.86	78.94	17.39%	3.10%	17.67%	5.694
025.43	Iron, ICP, Microwave (ppm)	24	22	517.3	46.67	38.57	14.01	41.03	7.56%	2.75%	8.04%	2.929
027.31	Magnesium, AAS, Dry ash (%)	8	7	0.8075	0.0452	0.0445	0.0110	0.0458	5.51%	1.36%	5.68%	4.176
027.41	Magnesium, ICP, Dry ash (%)	20	19	0.8051	0.0999	0.0549	0.0176	0.0576	6.66%	2.13%	7.00%	3.277
027.42	Magnesium, ICP, Open vessel (%)	19	17	0.8178	0.0518	0.0413	0.0160	0.0443	5.11%	1.97%	5.47%	2.773
027.43	Magnesium, ICP, Microwave (%)	31	28	0.7902	0.0559	0.0489	0.0161	0.0515	6.22%	2.05%	6.55%	3.200
027.53	Magnesium, ICP-MS, Microwave (%)	5	5	0.7813	0.0625	0.0503	0.0525	0.0727	6.44%	6.73%	9.31%	1.384
027.99	Magnesium, Miscellaneous (%)	5	5	0.8030	0.1308	0.1306	0.0095	0.1309	16.26%	1.18%	16.30%	13.80
028.31	Manganese, AAS, Dry ash (ppm)	8	8	471.0	15.72	14.82	7.441	16.58	3.15%	1.58%	3.52%	2.228
028.41	Manganese, ICP, Dry ash (ppm)	18	16	466.8	44.22	34.22	8.872	35.35	7.25%	1.88%	7.49%	3.985
028.42	Manganese, ICP, Open vessel (ppm)	20	20	469.1	33.23	30.05	20.06	36.13	6.41%	4.28%	7.70%	1.801
028.43	Manganese, ICP, Microwave (ppm)	31	29	470.1	35.08	34.75	11.35	36.56	7.39%	2.41%	7.77%	3.220
028.53	Manganese, ICP-MS, Microwave (ppm)	6	6	469.5	44.63	39.44	29.55	49.28	8.40%	6.29%	10.50%	1.668
031.01	Phosphorus, Photometric (%)	31	26	1.585	0.1496	0.0649	0.0208	0.0682	3.98%	1.27%	4.17%	3.281
031.41	Phosphorus, ICP, Dry ash (%)	23	20	1.607	0.1962	0.1087	0.0209	0.1107	6.63%	1.28%	6.75%	5.290
031.42	Phosphorus, ICP, Open vessel (%)	18	16	1.593	0.1466	0.0908	0.0412	0.0997	5.65%	2.57%	6.21%	2.418
031.43	Phosphorus, ICP, Microwave (%)	34	29	1.628	0.0980	0.0871	0.0354	0.0940	5.31%	2.16%	5.73%	2.655
031.53	Phosphorus, ICP-MS, Microwave (%)	5	5	1.647	0.2209	0.2064	0.1112	0.2344	12.53%	6.75%	14.24%	2.108
032.31	Potassium, AAS, Dry ash (%)	7	7	1.298	0.0756	0.0705	0.0385	0.0803	5.43%	2.96%	6.19%	2.088
032.41	Potassium, ICP, Dry ash (%)	18	15	1.339	0.1889	0.1059	0.0198	0.1078	7.67%	1.43%	7.80%	5.457
032.42	Potassium, ICP, Open vessel (%)	15	13	1.380	0.0595	0.0340	0.0324	0.0470	2.44%	2.33%	3.37%	1.448
032.43	Potassium, ICP, Microwave (%)	24	20	1.337	0.0429	0.0239	0.0157	0.0286	1.79%	1.17%	2.14%	1.824
032.99	Potassium, Miscellaneous (%)	5	5	1.230	0.1640	0.1633	0.0219	0.1647	13.27%	1.78%	13.39%	7.519
033.00	Salt as chloride, Sol Cl (%)	21	18	4.494	0.4578	0.2145	0.0407	0.2183	4.69%	0.89%	4.77%	5.361
033.01	Salt as chloride, Poten Cl (%)	31	26	4.759	0.1136	0.0785	0.0301	0.0841	1.66%	0.64%	1.77%	2.789
033.03	Salt as chloride, Quantab (%)	6	5	4.808	0.2124	0.1501	0.0577	0.1608	3.08%	1.18%	3.30%	2.787
033.99	Salt, Miscellaneous (%)	8	8	4.278	0.6187	0.6161	0.0813	0.6214	14.40%	1.90%	14.53%	7.645

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
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	9	8	6.629	1.321	1.317	0.1450	1.325	19.87%	2.19%	19.99%	9.138
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	13	12	6.646	0.8853	0.7368	0.2146	0.7674	11.33%	3.30%	11.80%	3.575
035.31	Sodium, AAS, Dry ash (%)	12	10	1.524	0.0868	0.0901	0.0121	0.0910	5.93%	0.80%	5.98%	7.511
035.41	Sodium, ICP, Dry ash (%)	20	19	1.467	0.1927	0.1212	0.0287	0.1246	8.08%	1.91%	8.30%	4.340
035.42	Sodium, ICP, Open vessel (%)	16	15	1.581	0.1325	0.1279	0.0490	0.1369	8.09%	3.10%	8.66%	2.796
035.43	Sodium, ICP, Microwave (%)	26	24	1.525	0.1232	0.1023	0.0346	0.1080	6.77%	2.29%	7.14%	3.124
035.53	Sodium, ICP-MS, Microwave (%)	5	5	1.474	0.1345	0.1150	0.0986	0.1515	7.80%	6.69%	10.28%	1.537
035.99	Sodium, Miscellaneous (%)	5	5	1.583	1.092	1.092	0.0187	1.092	68.97%	1.18%	68.98%	58.36
036.42	Sulfur, ICP, Open vessel (%)	19	17	0.4621	0.0463	0.0238	0.0154	0.0284	5.16%	3.34%	6.15%	1.841
036.43	Sulfur, ICP, Microwave (%)	16	14	0.4878	0.0375	0.0375	0.0064	0.0381	7.73%	1.32%	7.84%	5.937
037.31	Zinc, AAS, Dry ash (ppm)	8	7	1,124	79.24	43.05	23.16	48.89	3.75%	2.02%	4.26%	2.111
037.41	Zinc, ICP, Dry ash (ppm)	19	18	1,084	117.3	119.1	28.09	122.3	10.99%	2.59%	11.29%	4.354
037.42	Zinc, ICP, Open vessel (ppm)	19	17	1,111	111.5	111.8	21.91	113.9	10.02%	1.96%	10.21%	5.200
037.43	Zinc, ICP, Microwave (ppm)	31	29	1,115	85.55	82.76	28.31	87.47	7.40%	2.53%	7.82%	3.089
037.53	Zinc, ICP-MS, Microwave (ppm)	6	6	1,089	110.7	101.1	63.80	119.6	9.28%	5.86%	10.97%	1.874
038.43	Molybdenum, ICP, Microwave (ppm)	7	6	10.83	2.324	2.306	0.4123	2.342	21.29%	3.81%	21.63%	5.682
106.02	Vitamin A, LC (KU / kg)	14	13	49.69	8.795	8.157	4.653	9.390	16.42%	9.36%	18.90%	2.018
109.02	Vitamin E, LC (IU / kg)	19	17	228.0	34.85	34.87	6.453	35.46	15.18%	2.81%	15.44%	5.495
120.00	Alanine, Post-col Ninhydrin Der (%)	14	12	1.315	0.0861	0.0402	0.0129	0.0422	3.10%	1.00%	3.26%	3.267
120.05	Alanine, Pre-col AQC Der (%)	8	8	1.293	0.0754	0.0745	0.0168	0.0763	5.76%	1.30%	5.90%	4.549
121.00	Arginine, Post-col Ninhydrin Der (%)	14	12	2.865	0.1806	0.0792	0.0244	0.0829	2.82%	0.87%	2.95%	3.402
121.05	Arginine, Pre-col AQC Der (%)	8	6	2.857	0.2510	0.1118	0.0334	0.1167	4.03%	1.20%	4.20%	3.494
122.00	Aspartic, Post-col Ninhydrin Der (%)	14	13	2.746	0.1986	0.0789	0.0309	0.0847	2.92%	1.15%	3.14%	2.742
122.05	Aspartic, Pre-col AQC Der (%)	7	6	2.809	0.4146	0.1197	0.0721	0.1397	4.50%	2.71%	5.26%	1.938
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	14	13	0.4574	0.0267	0.0263	0.0082	0.0275	5.77%	1.81%	6.04%	3.343
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	6	6	0.3958	0.0674	0.0670	0.0107	0.0678	16.93%	2.70%	17.14%	6.345
125.00	Glutamic, Post-col Ninhydrin Der (%)	14	12	5.544	0.3769	0.1209	0.0507	0.1311	2.23%	0.93%	2.41%	2.587
125.05	Glutamic, Pre-col AQC Der (%)	8	7	5.520	0.2947	0.1205	0.1498	0.1923	2.22%	2.76%	3.54%	1.283
126.00	Glycine, Post-col Ninhydrin Der (%)	14	13	1.500	0.0811	0.0244	0.0215	0.0325	1.65%	1.45%	2.20%	1.511
126.05	Glycine, Pre-col AQC Der (%)	8	8	1.513	0.1354	0.1345	0.0216	0.1362	8.89%	1.43%	9.01%	6.304
127.00	Histidine, Post-col Ninhydrin Der (%)	14	14	0.7793	0.0421	0.0409	0.0141	0.0432	5.24%	1.81%	5.55%	3.069
127.05	Histidine, Pre-col AQC Der (%)	8	8	0.8116	0.0468	0.0435	0.0245	0.0499	5.35%	3.02%	6.15%	2.037
128.00	Isoleucine, Post-col Ninhydrin Der (%)	14	13	0.9995	0.0682	0.0680	0.0160	0.0699	6.84%	1.61%	7.02%	4.371
128.05	Isoleucine, Pre-col AQC Der (%)	8	7	1.010	0.1528	0.1105	0.0114	0.1111	10.52%	1.09%	10.58%	9.729
129.00	Leucine, Post-col Ninhydrin Der (%)	14	12	1.863	0.0965	0.0370	0.0151	0.0399	2.01%	0.82%	2.17%	2.647
129.05	Leucine, Pre-col AQC Der (%)	8	7	1.837	0.1561	0.0837	0.0225	0.0866	4.68%	1.26%	4.84%	3.847
130.00	L-Lysine, Post-col Ninhydrin Der (%)	14	14	1.406	0.0908	0.0894	0.0226	0.0922	6.36%	1.61%	6.56%	4.077
130.05	L-Lysine, Pre-col AQC Der (%)	8	7	1.396	0.1165	0.0473	0.0403	0.0622	3.48%	2.96%	4.57%	1.543
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	14	13	0.3810	0.0309	0.0226	0.0078	0.0239	6.03%	2.07%	6.37%	3.078
131.05	Methionine, PAO Pre-col AQC Der (%)	7	6	0.4128	0.0227	0.0223	0.0058	0.0230	5.40%	1.40%	5.58%	3.989
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	14	13	1.476	0.0771	0.0478	0.0214	0.0523	3.27%	1.47%	3.59%	2.444
132.05	Phenylalanine, Pre-col AQC Der (%)	8	8	1.506	0.0721	0.0656	0.0425	0.0781	4.35%	2.82%	5.19%	1.839
133.00	Proline, Post-col Ninhydrin Der (%)	14	13	1.366	0.0938	0.0553	0.0297	0.0628	4.11%	2.21%	4.66%	2.113
133.05	Proline, Pre-col AQC Der (%)	8	7	1.395	0.1076	0.1070	0.0158	0.1082	7.67%	1.13%	7.75%	6.848
134.00	Serine, Post-col Ninhydrin Der (%)	14	13	1.310	0.1189	0.0875	0.0281	0.0919	6.79%	2.18%	7.13%	3.271
134.05	Serine, Pre-col AQC Der (%)	8	7	1.323	0.1598	0.0864	0.0294	0.0913	6.30%	2.14%	6.66%	3.104

Test Material Code # 202128

Issue Date : 09/30/2021

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
135.00	Threonine, Post-col Ninhydrin Der (%)	14	12	1.010	0.0871	0.0544	0.0136	0.0561	5.49%	1.38%	5.66%	4.116
135.05	Threonine, Pre-col AQC Der (%)	8	8	0.9944	0.0978	0.0965	0.0227	0.0991	9.71%	2.28%	9.97%	4.377
137.00	Tyrosine, Post-col Ninhydrin Der (%)	12	11	0.8299	0.1282	0.0921	0.0190	0.0940	10.75%	2.21%	10.97%	4.961
137.05	Tyrosine, Pre-col AQC Der (%)	8	7	0.8685	0.1051	0.1105	0.0065	0.1107	12.60%	0.74%	12.62%	17.05
138.00	Valine, Post-col Ninhydrin Der (%)	14	13	1.305	0.1012	0.0623	0.0284	0.0685	4.85%	2.22%	5.33%	2.407
138.05	Valine, Pre-col AQC Der (%)	8	8	1.310	0.1600	0.1588	0.0280	0.1612	12.12%	2.14%	12.30%	5.748
361.02	Lasalocid Sodium, LC (ppm)	9	7	114.0	11.62	6.146	2.183	6.522	5.57%	1.98%	5.91%	2.987
361.03	Lasalocid Sodium, LC (UV or FL) (ppm)	8	6	106.8	10.39	8.631	0.9210	8.680	7.89%	0.84%	7.94%	9.424
400.01	Water Activity, Aqualab chilled mirror (Units)	12	11	0.5417	0.0332	0.0108	0.0029	0.0112	1.96%	0.52%	2.03%	3.873
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	7	6	0.1546	0.0332	0.0318	0.0136	0.0346	20.59%	8.80%	22.39%	2.545
518.53	Cadmium, ICP-MS, Microwave (ppm)	7	6	0.1708	0.0230	0.0245	0.0072	0.0256	14.43%	4.21%	15.03%	3.570
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	6	6	6.031	1.734	1.697	0.4971	1.769	28.15%	8.24%	29.33%	3.558
526.53	Lead, ICP-MS, Microwave (ppm)	7	7	0.4219	0.0283		0.0491			11.63%		

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