



AAFCO
Association of American Feed Control Officials



Animal Feed Scheme
Meatbird Grower, Medicated
Test Material Code # 202321

Method Summary Report
(Precision Report Follows)

Labs Reporting: 154
Methods Reported: 359
Issue Date : 02/28/2023

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	0.3000							
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	41	41	10.35	0.3816	10.37	0.2988	0.0583	2.88%	0.1312	2.81%
001.99	Loss on Drying, Miscellaneous (%)	14	14	9.814	0.7180	9.899	0.5957	0.1990	6.02%	0.0761	2.83%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	4	3	10.34	0.2178	10.34	0.2178	0.1257	2.11%	0.0500	2.81%
001.08	Loss on Drying, 102°C 16 hr, in meat (%)	2	2	10.44	0.4755						
001.05	Loss on Drying, LECO (%)	1	1	10.30							
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	104	101	23.38	0.3191	23.38	0.2404	0.0299	1.03%	0.2137	2.07%
002.05	Protein, Crude, Copper, Boric Acid (%)	24	23	22.93	0.2160	22.95	0.2045	0.0533	0.89%	0.1478	2.09%
002.01	Protein, Crude, Auto Kjel-Foss (%)	16	16	23.19	0.3871	23.14	0.2918	0.0912	1.26%	0.0882	2.08%
002.00	Protein, Crude, Crude (%)	2	2	22.63	1.093						
002.08	Protein, Crude, Cu/Ti (%)	2	2	23.02	0.0044						
002.99	Protein, Crude, Miscellaneous (%)	2	2	23.63	0.0354						
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	1	1	23.09							
002.04	Protein, Crude, Copper Catalyst (%)	1	1	22.97							
002.11	Protein, Crude, NIR (%)	1	1	23.79							
003.14	Fat, Crude, Ankom (%)	47	46	2.701	0.2432	2.698	0.2510	0.0463	9.30%	0.0950	3.44%
003.10	Fat, Crude, Randall, Pet Ether (%)	22	21	2.792	0.2452	2.758	0.1602	0.0437	5.81%	0.0832	3.43%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	13	13	2.829	0.1500	2.836	0.1526	0.0529	5.38%	0.1144	3.42%
003.06	Fat, Crude, Pet Ether (%)	12	12	2.778	0.1835	2.761	0.1643	0.0593	5.95%	0.1090	3.43%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	9	9	3.040	0.5185	2.947	0.3325	0.1385	11.28%	0.1474	3.40%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	7	7	2.699	0.2896	2.773	0.1290	0.0609	4.65%	0.0907	3.43%
003.99	Fat, Crude, Miscellaneous (%)	5	4	2.721	0.6870	2.721	0.6870	0.3966	25.24%	0.0925	3.44%
003.12	Fat, Crude, Hexane Ext (%)	3	3	2.770	0.0265	2.770	0.0265	0.0153	0.96%	0.2467	3.43%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	2	2	2.706	0.2283						
003.11	Fat, Crude, NIR (%)	1	1	2.930							
004.07	Fiber, Crude, ANKOM (%)	72	71	4.506	0.5489	4.487	0.4338	0.0643	9.67%	0.2076	3.19%
004.06	Fiber, Crude, Fibertec (%)	17	17	4.482	0.7675	4.430	0.4001	0.1213	9.03%	0.1563	3.20%
004.00	Fiber, Crude, Asbestos Free (%)	9	9	4.669	0.3742	4.648	0.3749	0.1562	8.07%	0.1743	3.17%
004.03	Fiber, Crude, Fritted Glass (%)	5	4	4.673	0.8859	4.673	0.8859	0.4429	18.96%	0.1267	3.17%

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004.11	Fiber, Crude, NIR (%)	1	1	3.145							
004.99	Fiber, Crude, Miscellaneous (%)	1	1	4.609							
005.00	Ash, 2h @ 600°C (%)	85	82	6.896	0.3333	6.916	0.3049	0.0421	4.41%	0.1098	2.99%
005.05	Ash, 3h @ 550°C (%)	21	21	7.169	0.1896	7.183	0.1811	0.0494	2.52%	0.0885	2.97%
005.99	Ash, Miscellaneous (%)	7	7	7.017	0.4225	7.017	0.4791	0.2263	6.83%	0.1440	2.98%
005.03	Ash, Microwave furnace (%)	2	2	6.900	0.4243						
005.11	Ash, NIR (%)	2	2	9.073	0.0318						
005.02	Ash, LECO (%)	1	1	7.436							
005.04	Ash, Acid insoluble (%)	1	1	0.2150							
006.99	Total Sugars, Miscellaneous (%)	7	7	7.295	5.100	5.818	1.662	0.7851	28.56%	0.2460	3.07%
006.00	Total Sugars, As sucrose (%)	3	3	5.954	0.6792	5.954	0.6792	0.3921	11.41%	0.1797	3.06%
006.01	Total Sugars, Mod. Fehling Soln (%)	1	1	6.790							
006.03	Total Sugars, Invert w/o Invrns (%)	1	1	5.350							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	44	44	5.988	0.7982	6.030	0.5161	0.0972	8.56%	0.2202	3.05%
008.02	Fiber, Acid Detergent, Crucible (%)	11	11	6.403	0.7991	6.320	0.6936	0.2614	10.98%	0.2858	3.03%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	1	1	6.065							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	43	43	13.21	1.255	13.03	0.7322	0.1396	5.62%	0.2446	2.72%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	12	11	13.61	1.024	13.63	1.106	0.4170	8.12%	0.2740	2.70%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	17.23							
010.99	Moisture, Miscellaneous (%)	15	14	10.31	0.3432	10.31	0.3892	0.1300	3.77%	0.1038	2.82%
010.03	Moisture, Karl-Fischer (%)	1	1	10.87							
010.11	Moisture, NIR (%)	1	1	9.715							
011.01	Loss on Drying, HT, 135°C 2hr (%)	61	60	11.03	0.4179	11.07	0.3577	0.0577	3.23%	0.1197	2.79%
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	3	3	10.59	0.0759	10.59	0.0759	0.0438	0.72%	0.0680	2.80%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	1	1	10.97							
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	12	12	29.36	1.900	29.29	1.994	0.7194	6.81%	0.7325	1.85%
012.00	Starch, Polarimetric (Ewers) (%)	10	10	32.10	0.9170	32.21	0.7315	0.2891	2.27%	0.1884	1.76%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	8	7	29.88	2.207	29.46	1.430	0.6757	4.85%	0.5769	1.84%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	2	2	27.77	1.135						
012.11	Starch, NIR (%)	1	1	29.97							
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	27.91							
013.02	Fat, Pretreat, Mojonier, Bak Ext, Acid hydrolysis (%)	13	13	3.969	0.6385	4.023	0.5850	0.2028	14.54%	0.1723	3.24%
013.00	Fat, Pretreat, Acid hydrolysis (%)	12	12	3.419	0.5284	3.403	0.5614	0.2026	16.50%	0.1816	3.33%
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	8	8	3.108	0.3736	3.148	0.1733	0.0766	5.50%	0.0950	3.37%
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	7	7	3.599	0.6219	3.520	0.5107	0.2413	14.51%	0.1419	3.31%
013.08	Fat, Pretreat, Roese-Gottlieb Modified, Alkaline Hydrolysis (%)	1	1	1.690							
015.43	Aluminum, ICP, Microwave (ppm)	6	6	247.3	31.75	247.3	36.00	18.37	14.56%	6.154	6.98%
015.41	Aluminum, ICP, Dry ash (ppm)	4	4	225.6	32.20	225.6	32.20	16.10	14.27%	3.792	7.08%
015.42	Aluminum, ICP, Open vessel (ppm)	2	2	97.88	31.15						
015.53	Aluminum, ICP-MS, Microwave (ppm)	2	2	214.3	13.69						

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015.99	Aluminum, Miscellaneous (ppm)	1	1	105.0							
017.42	Boron, ICP, Open vessel (ppm)	5	5	15.62	1.813	15.62	1.813	0.8106	11.60%	0.6200	10.58%
017.41	Boron, ICP, Dry ash (ppm)	5	4	15.76	1.458	15.76	1.458	0.7291	9.25%	0.5847	10.56%
017.43	Boron, ICP, Microwave (ppm)	5	4	16.50	0.3077	16.50	0.3077	0.1539	1.86%	0.5612	10.49%
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	13.10							
019.43	Calcium, ICP, Microwave (%)	30	29	1.371	0.0803	1.361	0.0648	0.0150	4.76%	0.0266	3.82%
019.41	Calcium, ICP, Dry ash (%)	19	19	1.386	0.0890	1.386	0.1006	0.0289	7.26%	0.0297	3.81%
019.31	Calcium, AAS, Dry ash (%)	17	17	1.350	0.0384	1.350	0.0435	0.0132	3.23%	0.0359	3.82%
019.42	Calcium, ICP, Open vessel (%)	17	16	1.387	0.1030	1.380	0.0969	0.0303	7.02%	0.0324	3.81%
019.08	Calcium, EDTA (%)	10	10	1.427	0.2754	1.349	0.0469	0.0186	3.48%	0.0308	3.82%
019.00	Calcium, Ox-Mn04 Vol. (%)	7	7	1.369	0.0530	1.369	0.0601	0.0284	4.39%	0.0228	3.82%
019.53	Calcium, ICP-MS, Microwave (%)	4	4	1.401	0.1216	1.401	0.1216	0.0608	8.68%	0.0930	3.80%
019.99	Calcium, Miscellaneous (%)	4	4	1.354	0.0352	1.354	0.0352	0.0176	2.60%	0.0325	3.82%
019.52	Calcium, ICP-MS, Open vessel (%)	3	3	1.287	0.2702	1.287	0.2702	0.1560	21.00%	0.0613	3.85%
019.09	Calcium, Ion-selective electrode (%)	2	2	1.362	0.0608						
019.44	Calcium, ICP, Dry ash (%)	2	2	1.323	0.0106						
019.32	Calcium, AAS, Open vessel (%)	1	1	1.375							
019.33	Calcium, AAS, Microwave (%)	1	1	1.365							
019.51	Calcium, ICP-MS, Dry ash (%)	1	1	1.365							
021.41	Cobalt, ICP, Dry ash (ppm)	3	3	0.8964	0.2557	0.8964	0.2557	0.1476	28.53%	0.0157	16.26%
021.42	Cobalt, ICP, Open vessel (ppm)	3	3	0.5673	0.1600	0.5673	0.1600	0.0924	28.21%	0.1140	17.42%
021.43	Cobalt, ICP, Microwave (ppm)	5	3	0.8782	0.1208	0.8782	0.1208	0.0854	13.75%	0.0240	16.31%
021.53	Cobalt, ICP-MS, Microwave (ppm)	3	3	0.7204	0.0618	0.7204	0.0618	0.0357	8.58%	0.0274	16.81%
021.31	Cobalt, AAS, Dry ash (ppm)	2	1	0.7450							
021.52	Cobalt, ICP-MS, Open vessel (ppm)	1		1.000							
022.43	Copper, ICP, Microwave (ppm)	26	26	15.34	1.549	15.21	1.266	0.3103	8.32%	0.8707	10.62%
022.42	Copper, ICP, Open vessel (ppm)	18	17	16.32	2.329	15.99	1.750	0.5305	10.94%	0.7728	10.54%
022.41	Copper, ICP, Dry ash (ppm)	15	14	15.65	1.123	15.60	1.177	0.3931	7.54%	0.6066	10.58%
022.31	Copper, AAS, Dry ash (ppm)	11	10	15.36	5.518	16.77	1.740	0.6880	10.38%	0.6978	10.47%
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	15.46	1.150	15.46	1.150	0.5142	7.44%	1.289	10.59%
022.33	Copper, AAS, Microwave (ppm)	3	3	14.25	4.549	14.25	4.549	3.216	31.92%	2.097	10.72%
022.99	Copper, Miscellaneous (ppm)	3	3	15.20	1.282	15.20	1.282	0.7399	8.43%	0.9333	10.62%
022.44	Copper, ICP, Dry ash (ppm)	2	2	15.49	0.7248						
022.52	Copper, ICP-MS, Open vessel (ppm)	2	2	22.90	2.256						
022.32	Copper, AAS, Open vessel (ppm)	1	1	14.25							
025.43	Iron, ICP, Microwave (ppm)	25	24	264.4	27.07	264.7	21.86	5.578	8.26%	7.573	6.91%
025.42	Iron, ICP, Open vessel (ppm)	16	16	225.1	64.32	232.8	49.33	15.42	21.19%	15.30	7.04%
025.41	Iron, ICP, Dry ash (ppm)	15	14	258.7	19.68	260.6	17.90	5.980	6.87%	7.645	6.93%
025.31	Iron, AAS, Dry ash (ppm)	11	11	270.3	23.51	273.4	18.50	6.972	6.77%	9.529	6.88%
025.53	Iron, ICP-MS, Microwave (ppm)	3	3	258.4	28.14	258.4	28.14	16.24	10.89%	18.13	6.93%

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025.33	Iron, AAS, Microwave (ppm)	2	2	280.1	18.58						
025.99	Iron, Miscellaneous (ppm)	2	2	250.8	19.45						
027.43	Magnesium, ICP, Microwave (%)	27	26	0.2223	0.0147	0.2213	0.0138	0.0034	6.22%	0.0081	5.02%
027.42	Magnesium, ICP, Open vessel (%)	19	17	0.2219	0.0121	0.2216	0.0104	0.0031	4.68%	0.0075	5.02%
027.41	Magnesium, ICP, Dry ash (%)	15	14	0.2188	0.0096	0.2180	0.0091	0.0030	4.18%	0.0023	5.03%
027.31	Magnesium, AAS, Dry ash (%)	11	10	0.2191	0.0090	0.2189	0.0099	0.0039	4.51%	0.0043	5.03%
027.53	Magnesium, ICP-MS, Microwave (%)	4	4	0.2187	0.0179	0.2187	0.0179	0.0089	8.18%	0.0167	5.03%
027.99	Magnesium, Miscellaneous (%)	4	4	0.2188	0.0048	0.2188	0.0048	0.0024	2.19%	0.0100	5.03%
027.52	Magnesium, ICP-MS, Open vessel (%)	3	3	0.1876	0.0761	0.1876	0.0761	0.0439	40.56%	0.0073	5.15%
027.33	Magnesium, AAS, Microwave (%)	2	2	0.2348	0.0145						
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.2450							
027.44	Magnesium, ICP, Dry ash (%)	1	1	0.2130							
028.43	Manganese, ICP, Microwave (ppm)	24	24	96.04	12.48	94.22	8.981	2.291	9.53%	4.573	8.07%
028.42	Manganese, ICP, Open vessel (ppm)	18	17	98.29	11.45	97.55	11.11	3.369	11.39%	3.017	8.03%
028.41	Manganese, ICP, Dry ash (ppm)	14	13	91.01	8.125	91.01	9.214	3.194	10.12%	3.359	8.11%
028.31	Manganese, AAS, Dry ash (ppm)	11	11	93.58	7.574	93.69	8.362	3.152	8.93%	3.446	8.08%
028.53	Manganese, ICP-MS, Microwave (ppm)	4	4	93.15	6.926	93.15	6.926	3.463	7.43%	10.33	8.08%
028.99	Manganese, Miscellaneous (ppm)	3	3	99.00	5.180	99.00	5.180	2.990	5.23%	8.600	8.01%
028.33	Manganese, AAS, Microwave (ppm)	2	2	88.86	8.994						
028.44	Manganese, ICP, Dry ash (ppm)	2	2	79.52	19.07						
028.52	Manganese, ICP-MS, Open vessel (ppm)	2	2	112.2	2.447						
028.00	Manganese, Color (ppm)	1	1	85.50							
028.32	Manganese, AAS, Open vessel (ppm)	1	1	97.05							
030.01	Nitrate, Ion-selective electrode (%)	1	1	0.0036							
031.01	Phosphorus, Photometric (%)	31	31	0.6252	0.0223	0.6269	0.0198	0.0044	3.15%	0.0167	4.29%
031.43	Phosphorus, ICP, Microwave (%)	29	28	0.6432	0.0760	0.6453	0.0323	0.0076	5.01%	0.0195	4.27%
031.42	Phosphorus, ICP, Open vessel (%)	20	20	0.6378	0.0416	0.6383	0.0462	0.0129	7.24%	0.0294	4.28%
031.41	Phosphorus, ICP, Dry ash (%)	17	16	0.6257	0.0324	0.6255	0.0364	0.0114	5.81%	0.0103	4.29%
031.44	Phosphorus, ICP, Dry ash (%)	4	4	0.6325	0.0281	0.6325	0.0281	0.0140	4.44%	0.0191	4.29%
031.03	Phosphorus, Autoanalyzer (%)	2	2	0.6010	0.0580						
031.52	Phosphorus, ICP-MS, Open vessel (%)	2	2	0.6907	0.0111						
031.53	Phosphorus, ICP-MS, Microwave (%)	2	2	0.6284	0.0943						
031.99	Phosphorus, Miscellaneous (%)	2	2	0.6350	0.0141						
031.00	Phosphorus, Vol (%)	1	1	0.6350							
031.02	Phosphorus, GQMP (AOAC 935.13-Extraction) (%)	1	1	0.6347							
031.06	Phosphorus, Hach Method (%)	1	1	0.8650							
031.51	Phosphorus, ICP-MS, Dry ash (%)	1	1	0.6100							
032.43	Potassium, ICP, Microwave (%)	27	27	1.194	0.0729	1.188	0.0615	0.0148	5.18%	0.0295	3.90%
032.42	Potassium, ICP, Open vessel (%)	19	19	1.206	0.0885	1.206	0.0963	0.0276	7.98%	0.0511	3.89%
032.41	Potassium, ICP, Dry ash (%)	15	15	1.186	0.0534	1.189	0.0536	0.0173	4.51%	0.0268	3.90%

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032.31	Potassium, AAS, Dry ash (%)	9	9	1.144	0.0601	1.144	0.0682	0.0284	5.96%	0.0302	3.92%
032.53	Potassium, ICP-MS, Microwave (%)	3	3	1.235	0.1287	1.235	0.1287	0.0743	10.42%	0.0736	3.87%
032.99	Potassium, Miscellaneous (%)	4	3	1.203	0.0566	1.203	0.0566	0.0327	4.70%	0.0200	3.89%
032.52	Potassium, ICP-MS, Open vessel (%)	2	2	1.191	0.1712						
032.02	Potassium, Flame Emission (%)	1	1	1.185							
032.08	Potassium, Ion-selective electrode (%)	1	1	1.137							
032.32	Potassium, AAS, Open vessel (%)	1	1	1.340							
032.33	Potassium, AAS, Microwave (%)	1	1	0.5700							
032.44	Potassium, ICP, Dry ash (%)	1	1	1.170							
033.01	Salt as chloride, Poten Cl (%)	24	23	0.4204	0.0314	0.4160	0.0197	0.0051	4.73%	0.0109	4.56%
033.00	Salt as chloride, Sol Cl (%)	16	16	0.4001	0.0775	0.4048	0.0760	0.0237	18.77%	0.0315	4.58%
033.99	Salt, Miscellaneous (%)	7	7	0.3982	0.0834	0.3963	0.0902	0.0426	22.76%	0.0184	4.60%
033.03	Salt as chloride, Quantab (%)	4	4	0.3513	0.0603	0.3513	0.0603	0.0302	17.18%	0.0550	4.68%
033.05	Salt as chloride, Ion Sel Electrode (%)	3	3	0.3750	0.0409	0.3750	0.0409	0.0236	10.91%	0.0180	4.64%
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	7	7	0.4273	0.1613	0.3822	0.0580	0.0274	15.18%	0.0238	18.49%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	5	5	0.3164	0.0550	0.3164	0.0550	0.0246	17.38%	0.0296	19.02%
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	6	4	0.4040	0.1560	0.4040	0.1560	0.0975	38.62%	0.0510	18.33%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	3	3	0.5772	0.1402	0.5772	0.1402	0.0810	24.30%	0.0510	17.38%
034.01	Selenium, Total (Se), Fluor (ppm)	1	1	0.3700							
034.99	Selenium, Total (Se), Miscellaneous (ppm)	1	1	1.130							
035.43	Sodium, ICP, Microwave (%)	24	24	0.1254	0.0098	0.1252	0.0108	0.0028	8.62%	0.0065	5.47%
035.41	Sodium, ICP, Dry ash (%)	17	17	0.1245	0.0147	0.1258	0.0135	0.0041	10.75%	0.0078	5.46%
035.42	Sodium, ICP, Open vessel (%)	16	16	0.1221	0.0093	0.1223	0.0100	0.0031	8.15%	0.0087	5.49%
035.31	Sodium, AAS, Dry ash (%)	10	10	0.1266	0.0082	0.1266	0.0093	0.0037	7.35%	0.0054	5.46%
035.01	Sodium, Ion-selective electrode (%)	4	3	0.1310	0.0259	0.1310	0.0259			0.0000	5.43%
035.99	Sodium, Miscellaneous (%)	3	3	0.1300	0.0200	0.1300	0.0200	0.0141	15.38%	0.0400	5.44%
035.52	Sodium, ICP-MS, Open vessel (%)	2	2	0.1321	0.0205						
035.53	Sodium, ICP-MS, Microwave (%)	2	2	0.1074	0.0036						
035.05	Sodium, Flame Emission (%)	1	1	0.1250							
035.32	Sodium, AAS, Open vessel (%)	1	1	0.1350							
035.33	Sodium, AAS, Microwave (%)	1	1	0.1400							
036.43	Sulfur, ICP, Microwave (%)	20	20	0.2785	0.0324	0.2820	0.0257	0.0072	9.13%	0.0118	4.84%
036.42	Sulfur, ICP, Open vessel (%)	18	17	0.2596	0.0292	0.2601	0.0320	0.0097	12.30%	0.0098	4.90%
036.04	Sulfur, LECO (%)	4	4	0.2661	0.0099	0.2661	0.0099	0.0050	3.74%	0.0087	4.88%
036.00	Sulfur, Gravimetric (%)	1	1	0.2890							
036.52	Sulfur, ICP-MS, Open vessel (%)	1	1	0.2665							
037.43	Zinc, ICP, Microwave (ppm)	28	28	96.24	8.978	96.49	8.481	2.003	8.79%	3.953	8.04%
037.42	Zinc, ICP, Open vessel (ppm)	17	16	95.29	10.14	94.92	10.64	3.325	11.21%	3.913	8.06%
037.31	Zinc, AAS, Dry ash (ppm)	13	13	93.38	5.707	93.81	5.393	1.870	5.75%	3.171	8.08%
037.41	Zinc, ICP, Dry ash (ppm)	14	13	93.86	7.764	92.87	6.219	2.156	6.70%	1.865	8.09%

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037.33	Zinc, AAS, Microwave (ppm)	3	3	100.1	11.04	100.1	11.04	7.806	11.03%	7.313	8.00%
037.44	Zinc, ICP, Dry ash (ppm)	3	3	82.80	9.284	82.80	9.284	5.360	11.21%	3.075	8.23%
037.99	Zinc, Miscellaneous (ppm)	3	3	97.78	4.262	97.78	4.262	2.460	4.36%	5.767	8.03%
037.52	Zinc, ICP-MS, Open vessel (ppm)	2	2	105.8	16.71						
037.53	Zinc, ICP-MS, Microwave (ppm)	2	2	87.21	8.901						
037.32	Zinc, AAS, Open vessel (ppm)	1	1	111.5							
037.34	Zinc, AAS, Dry ash (ppm)	1	1	87.33							
038.43	Molybdenum, ICP, Microwave (ppm)	8	8	3.995	0.4184	3.995	0.4745	0.2097	11.88%	0.1681	12.99%
038.42	Molybdenum, ICP, Open vessel (ppm)	4	4	4.250	0.4938	4.250	0.4938	0.2469	11.62%	0.3030	12.87%
038.41	Molybdenum, ICP, Dry ash (ppm)	3	3	4.070	0.2002	4.070	0.2002	0.1156	4.92%	0.0667	12.95%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	3	3	4.280	0.3278	4.280	0.3278	0.1892	7.66%	0.1255	12.85%
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	1	1	4.035							
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	11.05							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	0.6535							
042.00	Chloride, Titrimetric (%)	5	5	0.2900	0.0484	0.2900	0.0484	0.0216	16.67%	0.0100	4.82%
042.99	Chloride, Miscellaneous (%)	4	3	0.2540	0.0164	0.2540	0.0164	0.0116	6.44%	0.0060	4.92%
042.01	Chloride, Ion-selective electrode (%)	1	1	0.2335							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	2,215							
102.01	Niacin, Microbiological (ppm)	1	1	77.85							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	15.05							
104.00	Riboflavin, Fluorometric (ppm)	1	1	7.170							
105.01	Thiamine, Fluorometer (ppm)	1	1	12.10							
106.02	Vitamin A, LC (KU / kg)	4	2	1.435	0.0919	1.435	0.0919			0.0000	
106.01	Vitamin A, UV (KU / kg)	1		0.8000							
108.02	Vitamin D3, LC (KU / kg)	2	2	3.150	1.485						
108.99	Vitamin D3, Miscellaneous (KU / kg)	1	1	2.060							
109.02	Vitamin E, LC (IU / kg)	7	7	64.46	46.39	50.72	14.07	6.649	27.74%	3.350	
109.99	Vitamin E, Miscellaneous (IU / kg)	1	1	48.25							
111.00	Vitamin C, Phosphorylated, LC (ppm)	1		4.400							
112.01	Pyridoxine, LC (µg / g)	1	1	6.450							
113.01	Folic Acid, Micro (ppm)	1	1	1.735							
114.01	Biotin, Microbiological (ppm)	1	1	0.3120							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	2	2	0.3750	0.3394						
115.99	Non Protein N (NPN), Miscellaneous (%)	1	1	3.418							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	100.0							
120.00	Alanine, Post-col Ninhydrin Der (%)	15	15	1.086	0.0576	1.097	0.0261	0.0084	2.38%	0.0173	3.94%
120.05	Alanine, Pre-col AQC Der (%)	6	6	1.090	0.0297	1.090	0.0337	0.0172	3.09%	0.0165	3.95%
120.99	Alanine, Miscellaneous (%)	3	3	1.135	0.0433	1.135	0.0433	0.0306	3.81%	0.0250	3.92%
120.02	Alanine, Post-col OPA Der (%)	1	1	1.076							
121.00	Arginine, Post-col Ninhydrin Der (%)	15	15	1.517	0.0389	1.514	0.0392	0.0126	2.59%	0.0245	3.76%

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121.05	Arginine, Pre-col AQC Der (%)	6	5	1.492	0.0710	1.492	0.0710	0.0397	4.76%	0.0143	3.77%
121.99	Arginine, Miscellaneous (%)	3	3	1.397	0.2951	1.397	0.2951	0.1704	21.13%	0.0133	3.80%
121.02	Arginine, Post-col OPA Der (%)	1	1	1.456							
122.00	Aspartic, Post-col Ninhydrin Der (%)	15	14	2.354	0.0926	2.349	0.0703	0.0235	2.99%	0.0258	3.52%
122.05	Aspartic, Pre-col AQC Der (%)	6	6	2.339	0.1059	2.332	0.1024	0.0522	4.39%	0.0590	3.52%
122.99	Aspartic, Miscellaneous (%)	3	3	2.243	0.4073	2.243	0.4073	0.2352	18.16%	0.0700	3.54%
122.02	Aspartic, Post-col OPA Der (%)	1	1	2.404							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	14	14	0.3601	0.0213	0.3607	0.0210	0.0070	5.83%	0.0079	4.66%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	5	4	0.3900	0.0108	0.3900	0.0108	0.0062	2.77%	0.0100	4.61%
124.99	Cysteine/Cystine, Miscellaneous (%)	3	3	0.3433	0.1106	0.3433	0.1106	0.0782	32.21%	0.0200	4.70%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.3620							
125.00	Glutamic, Post-col Ninhydrin Der (%)	15	14	4.110	0.1804	4.091	0.1529	0.0511	3.74%	0.0358	3.24%
125.05	Glutamic, Pre-col AQC Der (%)	6	5	3.969	0.3357	3.969	0.3357	0.1877	8.46%	0.0400	3.25%
125.99	Glutamic, Miscellaneous (%)	3	3	3.883	0.2977	3.883	0.2977	0.1719	7.67%	0.0800	3.26%
125.01	Glutamic, Pre-col OPA Der (%)	1	1	3.785							
125.02	Glutamic, Post-col OPA Der (%)	1	1	4.080							
126.00	Glycine, Post-col Ninhydrin Der (%)	15	15	1.021	0.1364	0.9938	0.0306	0.0099	3.07%	0.0223	4.00%
126.05	Glycine, Pre-col AQC Der (%)	6	6	0.9712	0.0414	0.9712	0.0469	0.0239	4.83%	0.0180	4.02%
126.99	Glycine, Miscellaneous (%)	3	3	0.8450	0.3609	0.8450	0.3609	0.2552	42.71%	0.0700	4.10%
126.02	Glycine, Post-col OPA Der (%)	1	1	0.9880							
127.00	Histidine, Post-col Ninhydrin Der (%)	15	15	0.5990	0.0343	0.5954	0.0275	0.0089	4.61%	0.0110	4.32%
127.05	Histidine, Pre-col AQC Der (%)	6	6	0.5598	0.0281	0.5598	0.0319	0.0163	5.69%	0.0168	4.36%
127.99	Histidine, Miscellaneous (%)	3	3	0.5683	0.1255	0.5683	0.1255	0.0888	22.09%	0.0100	4.35%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.5610							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	15	15	0.9396	0.0692	0.9418	0.0733	0.0237	7.78%	0.0270	4.04%
128.05	Isoleucine, Pre-col AQC Der (%)	6	5	0.9846	0.0646	0.9846	0.0646	0.0361	6.56%	0.0090	4.01%
128.99	Isoleucine, Miscellaneous (%)	3	3	0.8717	0.2006	0.8717	0.2006			0.0100	4.08%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.9235							
129.00	Leucine, Post-col Ninhydrin Der (%)	15	15	1.811	0.0737	1.806	0.0649	0.0210	3.60%	0.0275	3.66%
129.05	Leucine, Pre-col AQC Der (%)	6	5	1.789	0.1057	1.789	0.1057	0.0591	5.91%	0.0050	3.66%
129.99	Leucine, Miscellaneous (%)	3	3	1.693	0.3195	1.693	0.3195	0.1844	18.87%	0.0533	3.69%
129.02	Leucine, Post-col OPA Der (%)	1	1	1.748							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	17	17	1.257	0.0587	1.259	0.0563	0.0171	4.47%	0.0157	3.86%
130.05	L-Lysine, Pre-col AQC Der (%)	6	6	1.235	0.0604	1.235	0.0685	0.0349	5.55%	0.0470	3.87%
130.99	L-Lysine, Miscellaneous (%)	4	3	1.215	0.3255	1.215	0.3255	0.2302	26.79%	0.0300	3.88%
130.02	L-Lysine, Post-col OPA Der (%)	1	1	1.349							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	15	15	0.3889	0.0276	0.3842	0.0200	0.0064	5.20%	0.0156	4.62%
131.05	Methionine, PAO Pre-col AQC Der (%)	7	7	0.3563	0.0602	0.3563	0.0683	0.0322	19.16%	0.0206	4.67%
131.99	Methionine, Miscellaneous (%)	3	3	0.3817	0.0202	0.3817	0.0202	0.0143	5.30%	0.0500	4.62%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.3740							

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132.00	Phenylalanine, Post-col Ninhydrin Der (%)	14	14	1.102	0.0676	1.104	0.0265	0.0089	2.40%	0.0213	3.94%
132.05	Phenylalanine, Pre-col AQC Der (%)	6	5	1.061	0.0791	1.061	0.0791	0.0442	7.46%	0.0113	3.96%
132.99	Phenylalanine, Miscellaneous (%)	3	3	1.102	0.1528	1.102	0.1528	0.0882	13.86%	0.0167	3.94%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	1.068							
133.00	Proline, Post-col Ninhydrin Der (%)	15	15	1.273	0.0750	1.278	0.0689	0.0223	5.39%	0.0249	3.85%
133.05	Proline, Pre-col AQC Der (%)	6	6	1.276	0.0870	1.276	0.0986	0.0503	7.73%	0.0270	3.86%
133.99	Proline, Miscellaneous (%)	3	3	1.222	0.1415	1.222	0.1415	0.0817	11.58%	0.0233	3.88%
134.00	Serine, Post-col Ninhydrin Der (%)	15	15	1.109	0.0575	1.112	0.0578	0.0186	5.19%	0.0220	3.94%
134.05	Serine, Pre-col AQC Der (%)	6	6	1.053	0.1497	1.053	0.1697	0.0866	16.12%	0.0350	3.97%
134.99	Serine, Miscellaneous (%)	3	3	1.160	0.0312	1.160	0.0312	0.0180	2.69%	0.0200	3.91%
134.02	Serine, Post-col OPA Der (%)	1	1	0.9835							
135.00	Threonine, Post-col Ninhydrin Der (%)	15	15	0.8684	0.0377	0.8691	0.0387	0.0125	4.45%	0.0145	4.09%
135.05	Threonine, Pre-col AQC Der (%)	6	6	0.8046	0.0822	0.8145	0.0689	0.0352	8.46%	0.0238	4.13%
135.99	Threonine, Miscellaneous (%)	3	3	0.9117	0.0506	0.9117	0.0506	0.0358	5.55%	0.0550	4.06%
135.01	Threonine, Pre-col OPA Der (%)	1	1	0.8150							
135.02	Threonine, Post-col OPA Der (%)	1	1	0.8360							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	7	7	0.3091	0.0152	0.3069	0.0116	0.0055	3.77%	0.0099	4.78%
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	5	5	0.3174	0.0357	0.3174	0.0357	0.0160	11.26%	0.0074	4.75%
136.99	Tryptophan, Miscellaneous (%)	2	2	0.3950	0.1768						
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	1	1	0.3320							
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.3015							
136.05	Tryptophan, Pre-col AQC Der (%)	1	1	0.3110							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	14	14	0.7595	0.0725	0.7564	0.0597	0.0200	7.90%	0.0199	4.17%
137.05	Tyrosine, Pre-col AQC Der (%)	6	6	0.7418	0.1077	0.7418	0.1221	0.0623	16.46%	0.0273	4.18%
137.99	Tyrosine, Miscellaneous (%)	3	3	0.6667	0.1450	0.6667	0.1450	0.1026	21.75%	0.0200	4.25%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.6205							
138.00	Valine, Post-col Ninhydrin Der (%)	14	14	1.064	0.0514	1.065	0.0556	0.0186	5.23%	0.0251	3.96%
138.05	Valine, Pre-col AQC Der (%)	6	6	1.056	0.0599	1.067	0.0408	0.0208	3.83%	0.0238	3.96%
138.99	Valine, Miscellaneous (%)	3	3	1.060	0.1744	1.060	0.1744	0.1007	16.45%	0.0200	3.96%
138.02	Valine, Post-col OPA Der (%)	1	1	1.114							
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.1425	0.1237						
139.05	Taurine, Pre-col AQC Der (%)	1	1	0.0145							
139.99	Taurine, Miscellaneous (%)	2	1	0.0400							
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
160.99	Fructose, Miscellaneous (%)	1	1	0.4150							
162.99	Glucose, Miscellaneous (%)	1	1	0.1700							
163.99	Lactose, Miscellaneous (%)	1		0.1500							
164.99	Maltose, Miscellaneous (%)	1		0.1500							
165.99	Sucrose, Miscellaneous (%)	1	1	3.355							
166.99	Raffinose, Miscellaneous (%)	1	1	0.5600							

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167.99	Stachyose, Miscellaneous (%)	1	1	2.120							
351.03	Chlortetracycline, LC (UV or FL) (ppm)	9	9	169.2	28.44	173.1	22.25	9.271	12.85%	12.02	7.36%
351.00	Chlortetracycline, Plate (ppm)	3	3	184.7	22.43	184.7	22.43	12.95	12.14%	9.942	7.29%
351.05	Chlortetracycline, LC-MS/MS (ppm)	1	1	181.8							
365.05	Monensin, LC-MS/MS (ppm)	1	1	162.5							
400.01	Water Activity, Aqualab chilled mirror (Units)	12	11	0.5826	0.0263	0.5800	0.0241	0.0091	4.16%	0.0023	
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	2	2	0.1041	0.0041						
516.00	Arsenic, Total (As), AA, Hydride (ppm)	1	1	0.1030							
516.52	Arsenic, Total (As), ICP-MS, Open vessel (ppm)	1	1	0.0960							
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		20.00							
518.53	Cadmium, ICP-MS, Microwave (ppm)	3	3	0.0974	0.0124	0.0974	0.0124	0.0071	12.70%	0.0054	22.00%
518.41	Cadmium, ICP, Dry ash (ppm)	2	2	0.0859	0.0012						
518.43	Cadmium, ICP, Microwave (ppm)	2	1	0.0856							
518.52	Cadmium, ICP-MS, Open vessel (ppm)	1	1	0.1015							
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	4	4	3.299	1.523	3.299	1.523	0.7617	46.18%	0.0899	13.37%
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	3	3	3.165	0.3253	3.165	0.3253	0.1878	10.28%	0.2586	13.45%
520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	2	2	2.411	0.1264						
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	2	2	3.872	0.2429						
520.52	Chromium, Total (Cr), ICP-MS, Open vessel (ppm)	1	1	2.088							
526.53	Lead, ICP-MS, Microwave (ppm)	3	3	0.1357	0.0147	0.1357	0.0147	0.0085	10.81%	0.0064	21.61%
526.41	Lead, ICP, Dry ash (ppm)	2	2	0.1464	0.0051						
526.34	Lead, AAS, Graphite furnace (ppm)	1	1	616.0							
526.43	Lead, ICP, Microwave (ppm)	2	1	0.1747							
526.52	Lead, ICP-MS, Open vessel (ppm)	1	1	0.1215							
529.99	Mercury, Miscellaneous (ppb)	3	1								
539.41	Nickel, ICP, Dry ash (ppm)	2	2	2.448	0.1732						
539.43	Nickel, ICP, Microwave (ppm)	3	2	2.712	0.1670	2.712	0.1670			0.8320	13.77%
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	2.650	0.0777						
539.52	Nickel, ICP-MS, Open vessel (ppm)	1	1	2.174							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	2		0.0050							
714.99	Myristic Acid (14:0), Miscellaneous (% (w/w))	1	1	0.0069							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	1	1	0.6027							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	2		0.0050							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	1	1	0.3038							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	1	1	0.4646							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	2	2	1.369	0.1778						
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	2	2	0.1028	0.0186						
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	1	1	0.0120							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	1	1	0.0101							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	1		0.0000							

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
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	0.0107							
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 (%	2		0.0000							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0091							
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	0.1200							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	1	1	1.495							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	1	1	2.755							

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

Meatbird Grower, Medicated

Test Material Code # 202321

Method Precision Report

Methods Reported: 118

Labs Reporting: 154

Issue Date : 02/28/2023

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 (%)	41	38	10.35	0.3816	0.3048	0.0979	0.3201	2.93%	0.94%	3.08%	3.270
001.99	Loss on Drying, Miscellaneous (%)	14	13	9.814	0.7180	0.5076	0.0659	0.5119	5.10%	0.66%	5.14%	7.763
002.01	Protein, Crude, Auto Kjel-Foss (%)	16	15	23.19	0.3871	0.2396	0.0685	0.2492	1.04%	0.30%	1.08%	3.635
002.05	Protein, Crude, Copper, Boric Acid (%)	24	22	22.93	0.2160	0.1571	0.1247	0.2006	0.68%	0.54%	0.87%	1.608
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	104	93	23.38	0.3191	0.2223	0.1609	0.2744	0.95%	0.69%	1.17%	1.706
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	9	8	3.040	0.5185	0.2148	0.1557	0.2653	7.45%	5.40%	9.20%	1.704
003.06	Fat, Crude, Pet Ether (%)	12	11	2.778	0.1835	0.1082	0.0995	0.1470	3.95%	3.63%	5.37%	1.478
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	13	12	2.829	0.1500	0.1379	0.0770	0.1579	4.90%	2.74%	5.61%	2.050
003.10	Fat, Crude, Randall, Pet Ether (%)	22	19	2.792	0.2452	0.1569	0.0536	0.1658	5.70%	1.95%	6.02%	3.093
003.13	Fat, Crude, Randall, Hexane Ext. (%)	7	6	2.699	0.2896	0.0645	0.0725	0.0970	2.30%	2.58%	3.46%	1.339
003.14	Fat, Crude, Ankom (%)	47	46	2.701	0.2432	0.2358	0.0838	0.2503	8.73%	3.10%	9.27%	2.987
004.00	Fiber, Crude, Asbestos Free (%)	9	9	4.669	0.3742	0.3595	0.1465	0.3882	7.70%	3.14%	8.32%	2.650
004.06	Fiber, Crude, Fibertec (%)	17	16	4.482	0.7675	0.5797	0.1289	0.5938	13.30%	2.96%	13.63%	4.607
004.07	Fiber, Crude, ANKOM (%)	72	67	4.506	0.5489	0.4050	0.1713	0.4398	9.02%	3.81%	9.79%	2.567
005.00	Ash, 2h @ 600°C (%)	85	77	6.896	0.3333	0.2948	0.0856	0.3070	4.27%	1.24%	4.45%	3.587
005.05	Ash, 3h @ 550°C (%)	21	20	7.169	0.1896	0.1786	0.0650	0.1900	2.49%	0.90%	2.65%	2.924
005.99	Ash, Miscellaneous (%)	7	6	7.017	0.4225	0.3681	0.0847	0.3778	5.18%	1.19%	5.31%	4.461
006.99	Total Sugars, Miscellaneous (%)	7	5	7.295	5.100	0.8549	0.1017	0.8609	16.75%	1.99%	16.87%	8.462
008.02	Fiber, Acid Detergent, Crucible (%)	11	10	6.403	0.7991	0.5097	0.2171	0.5540	8.20%	3.49%	8.91%	2.552
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	44	40	5.988	0.7982	0.5790	0.1559	0.5996	9.55%	2.57%	9.89%	3.846
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	12	11	13.61	1.024	1.013	0.2101	1.035	7.45%	1.54%	7.61%	4.927
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	43	40	13.21	1.255	0.8490	0.2124	0.8751	6.48%	1.62%	6.68%	4.121
010.99	Moisture, Miscellaneous (%)	15	14	10.31	0.3432	0.3366	0.0951	0.3497	3.26%	0.92%	3.39%	3.679
011.01	Loss on Drying, HT, 135°C 2hr (%)	61	57	11.03	0.4179	0.3672	0.0861	0.3771	3.32%	0.78%	3.41%	4.379
012.00	Starch, Polarimetric (Ewers) (%)	10	9	32.10	0.9170	0.5317	0.1907	0.5648	1.64%	0.59%	1.75%	2.962
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	12	12	29.36	1.900	1.851	0.6056	1.948	6.30%	2.06%	6.63%	3.216
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	8	6	29.88	2.207	0.8540	0.4591	0.9696	2.93%	1.58%	3.33%	2.112
013.00	Fat, Pretreat, Acid hydrolysis (%)	12	11	3.419	0.5284	0.5413	0.1361	0.5582	15.74%	3.96%	16.23%	4.102
013.02	Fat, Pretreat, Mojonier, Bak Ext, Acid hydrolysis (%)	13	12	3.969	0.6385	0.4510	0.1492	0.4750	11.01%	3.64%	11.60%	3.184
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	8	7	3.108	0.3736	0.2016	0.0624	0.2110	6.26%	1.94%	6.55%	3.379
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	7	6	3.599	0.6219	0.3142	0.1244	0.3379	9.26%	3.67%	9.96%	2.716
015.43	Aluminum, ICP, Microwave (ppm)	6	6	247.3	31.75	31.45	6.108	32.04	12.72%	2.47%	12.96%	5.246
017.42	Boron, ICP, Open vessel (ppm)	5	5	15.62	1.813	1.770	0.5551	1.855	11.33%	3.55%	11.87%	3.341
019.00	Calcium, Ox-Mn04 Vol. (%)	7	7	1.369	0.0530	0.0518	0.0156	0.0541	3.79%	1.14%	3.95%	3.462
019.08	Calcium, EDTA (%)	10	9	1.427	0.2754	0.0335	0.0194	0.0387	2.50%	1.44%	2.89%	1.999
019.31	Calcium, AAS, Dry ash (%)	17	17	1.350	0.0384	0.0321	0.0298	0.0438	2.38%	2.21%	3.24%	1.469

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
019.41	Calcium, ICP, Dry ash (%)	19	18	1.386	0.0890	0.0900	0.0220	0.0927	6.49%	1.59%	6.68%	4.208
019.42	Calcium, ICP, Open vessel (%)	17	14	1.387	0.1030	0.0766	0.0220	0.0797	5.62%	1.62%	5.85%	3.618
019.43	Calcium, ICP, Microwave (%)	30	27	1.371	0.0803	0.0520	0.0203	0.0558	3.84%	1.50%	4.12%	2.753
022.31	Copper, AAS, Dry ash (ppm)	11	8	15.36	5.518	1.041	0.5002	1.155	6.20%	2.98%	6.88%	2.309
022.41	Copper, ICP, Dry ash (ppm)	15	13	15.65	1.123	1.045	0.3740	1.110	6.63%	2.37%	7.04%	2.967
022.42	Copper, ICP, Open vessel (ppm)	18	15	16.32	2.329	1.507	0.7113	1.666	9.43%	4.45%	10.42%	2.342
022.43	Copper, ICP, Microwave (ppm)	26	25	15.34	1.549	1.162	0.6952	1.354	7.66%	4.59%	8.93%	1.948
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	15.46	1.150	0.9172	0.9806	1.343	5.93%	6.34%	8.68%	1.369
025.31	Iron, AAS, Dry ash (ppm)	11	10	270.3	23.51	13.57	5.908	14.80	4.91%	2.14%	5.36%	2.505
025.41	Iron, ICP, Dry ash (ppm)	15	14	258.7	19.68	18.94	7.558	20.39	7.32%	2.92%	7.88%	2.698
025.42	Iron, ICP, Open vessel (ppm)	16	13	225.1	64.32	42.57	8.883	43.49	17.61%	3.67%	17.99%	4.896
025.43	Iron, ICP, Microwave (ppm)	25	21	264.4	27.07	17.08	6.398	18.24	6.50%	2.44%	6.94%	2.850
027.31	Magnesium, AAS, Dry ash (%)	11	10	0.2191	0.0090	0.0087	0.0031	0.0092	3.96%	1.40%	4.20%	3.002
027.41	Magnesium, ICP, Dry ash (%)	15	13	0.2188	0.0096	0.0099	0.0008	0.0099	4.52%	0.37%	4.54%	12.33
027.42	Magnesium, ICP, Open vessel (%)	19	17	0.2219	0.0121	0.0113	0.0061	0.0129	5.11%	2.73%	5.80%	2.122
027.43	Magnesium, ICP, Microwave (%)	27	24	0.2223	0.0147	0.0127	0.0041	0.0134	5.77%	1.87%	6.06%	3.246
028.31	Manganese, AAS, Dry ash (ppm)	11	11	93.58	7.574	7.266	3.025	7.870	7.76%	3.23%	8.41%	2.601
028.41	Manganese, ICP, Dry ash (ppm)	14	13	91.01	8.125	7.885	2.773	8.359	8.66%	3.05%	9.18%	3.015
028.42	Manganese, ICP, Open vessel (ppm)	18	15	98.29	11.45	9.209	2.306	9.494	9.57%	2.40%	9.86%	4.116
028.43	Manganese, ICP, Microwave (ppm)	24	23	96.04	12.48	9.583	3.759	10.29	10.15%	3.98%	10.90%	2.738
031.01	Phosphorus, Photometric (%)	31	29	0.6252	0.0223	0.0191	0.0105	0.0218	3.04%	1.67%	3.47%	2.075
031.41	Phosphorus, ICP, Dry ash (%)	17	16	0.6257	0.0324	0.0320	0.0069	0.0327	5.11%	1.10%	5.23%	4.741
031.42	Phosphorus, ICP, Open vessel (%)	20	19	0.6378	0.0416	0.0364	0.0252	0.0443	5.68%	3.93%	6.91%	1.757
031.43	Phosphorus, ICP, Microwave (%)	29	27	0.6432	0.0760	0.0462	0.0152	0.0487	7.07%	2.32%	7.44%	3.209
032.31	Potassium, AAS, Dry ash (%)	9	9	1.144	0.0601	0.0579	0.0229	0.0623	5.06%	2.00%	5.44%	2.720
032.41	Potassium, ICP, Dry ash (%)	15	15	1.186	0.0534	0.0507	0.0239	0.0560	4.27%	2.01%	4.72%	2.347
032.42	Potassium, ICP, Open vessel (%)	19	18	1.206	0.0885	0.0767	0.0432	0.0880	6.41%	3.61%	7.35%	2.038
032.43	Potassium, ICP, Microwave (%)	27	25	1.194	0.0729	0.0556	0.0219	0.0598	4.68%	1.84%	5.03%	2.731
033.00	Salt as chloride, Sol Cl (%)	16	14	0.4001	0.0775	0.0612	0.0192	0.0641	14.95%	4.69%	15.67%	3.340
033.01	Salt as chloride, Poten Cl (%)	24	21	0.4204	0.0314	0.0163	0.0078	0.0181	3.95%	1.90%	4.38%	2.306
033.99	Salt, Miscellaneous (%)	7	7	0.3982	0.0834	0.0828	0.0139	0.0840	20.80%	3.50%	21.09%	6.028
034.04	Selenium, Total (Se), AA, Hydride (ppm)	5	5	0.3164	0.0550	0.0523	0.0239	0.0575	16.53%	7.56%	18.18%	2.403
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	7	6	0.4273	0.1613	0.0348	0.0180	0.0392	9.47%	4.89%	10.66%	2.181
035.31	Sodium, AAS, Dry ash (%)	10	9	0.1266	0.0082	0.0084	0.0028	0.0089	6.61%	2.22%	6.98%	3.148
035.41	Sodium, ICP, Dry ash (%)	17	15	0.1245	0.0147	0.0119	0.0035	0.0124	9.32%	2.78%	9.73%	3.502
035.42	Sodium, ICP, Open vessel (%)	16	16	0.1221	0.0093	0.0079	0.0068	0.0104	6.50%	5.53%	8.53%	1.542
035.43	Sodium, ICP, Microwave (%)	24	24	0.1254	0.0098	0.0094	0.0040	0.0102	7.50%	3.19%	8.15%	2.551
036.42	Sulfur, ICP, Open vessel (%)	18	16	0.2596	0.0292	0.0299	0.0053	0.0304	11.53%	2.05%	11.71%	5.721
036.43	Sulfur, ICP, Microwave (%)	20	19	0.2785	0.0324	0.0213	0.0078	0.0227	7.49%	2.76%	7.99%	2.890
037.31	Zinc, AAS, Dry ash (ppm)	13	11	93.38	5.707	4.177	2.285	4.761	4.42%	2.42%	5.04%	2.084
037.41	Zinc, ICP, Dry ash (ppm)	14	11	93.86	7.764	3.829	1.310	4.047	4.20%	1.44%	4.44%	3.089
037.42	Zinc, ICP, Open vessel (ppm)	17	15	95.29	10.14	9.631	3.330	10.19	10.02%	3.46%	10.60%	3.061
037.43	Zinc, ICP, Microwave (ppm)	28	26	96.24	8.978	7.283	3.141	7.932	7.52%	3.24%	8.19%	2.525
038.43	Molybdenum, ICP, Microwave (ppm)	8	8	3.995	0.4184	0.4047	0.1503	0.4317	10.13%	3.76%	10.81%	2.873
042.00	Chloride, Titrimetric (%)	5	5	0.2900	0.0484	0.0482	0.0045	0.0485	16.64%	1.54%	16.71%	10.83
109.02	Vitamin E, LC (IU / kg)	7	5	64.46	46.39	10.01	1.309	10.09	21.23%	2.78%	21.41%	7.713

Test Material Code # 202321

Issue Date : 02/28/2023

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
120.00	Alanine, Post-col Ninhydrin Der (%)	15	14	1.086	0.0576	0.0186	0.0141	0.0234	1.69%	1.29%	2.12%	1.651
120.05	Alanine, Pre-col AQC Der (%)	6	5	1.090	0.0297	0.0326	0.0055	0.0330	2.98%	0.50%	3.03%	6.030
121.00	Arginine, Post-col Ninhydrin Der (%)	15	15	1.517	0.0389	0.0361	0.0202	0.0414	2.38%	1.33%	2.73%	2.048
121.05	Arginine, Pre-col AQC Der (%)	6	5	1.492	0.0710	0.0707	0.0094	0.0714	4.74%	0.63%	4.78%	7.585
122.00	Aspartic, Post-col Ninhydrin Der (%)	15	13	2.354	0.0926	0.0655	0.0196	0.0683	2.80%	0.84%	2.93%	3.487
122.05	Aspartic, Pre-col AQC Der (%)	6	6	2.339	0.1059	0.1016	0.0422	0.1100	4.34%	1.80%	4.70%	2.607
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	14	14	0.3601	0.0213	0.0208	0.0062	0.0218	5.79%	1.73%	6.04%	3.488
125.00	Glutamic, Post-col Ninhydrin Der (%)	15	13	4.110	0.1804	0.1209	0.0269	0.1238	2.97%	0.66%	3.04%	4.607
125.05	Glutamic, Pre-col AQC Der (%)	6	5	3.969	0.3357	0.3353	0.0248	0.3362	8.45%	0.62%	8.47%	13.55
126.00	Glycine, Post-col Ninhydrin Der (%)	15	13	1.021	0.1364	0.0328	0.0135	0.0355	3.33%	1.37%	3.60%	2.634
126.05	Glycine, Pre-col AQC Der (%)	6	5	0.9712	0.0414	0.0435	0.0053	0.0438	4.46%	0.54%	4.49%	8.271
127.00	Histidine, Post-col Ninhydrin Der (%)	15	14	0.5990	0.0343	0.0219	0.0087	0.0236	3.70%	1.47%	3.98%	2.701
127.05	Histidine, Pre-col AQC Der (%)	6	6	0.5598	0.0281	0.0270	0.0110	0.0291	4.82%	1.96%	5.21%	2.652
128.00	Isoleucine, Post-col Ninhydrin Der (%)	15	15	0.9396	0.0692	0.0676	0.0209	0.0707	7.20%	2.22%	7.53%	3.392
128.05	Isoleucine, Pre-col AQC Der (%)	6	5	0.9846	0.0646	0.0646	0.0042	0.0647	6.56%	0.43%	6.57%	15.25
129.00	Leucine, Post-col Ninhydrin Der (%)	15	15	1.811	0.0737	0.0721	0.0218	0.0753	3.98%	1.20%	4.16%	3.459
129.05	Leucine, Pre-col AQC Der (%)	6	5	1.789	0.1057	0.1057	0.0022	0.1057	5.91%	0.12%	5.91%	47.28
130.00	L-Lysine, Post-col Ninhydrin Der (%)	17	16	1.257	0.0587	0.0469	0.0110	0.0481	3.70%	0.87%	3.80%	4.372
130.05	L-Lysine, Pre-col AQC Der (%)	6	6	1.235	0.0604	0.0572	0.0272	0.0634	4.64%	2.20%	5.13%	2.330
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	15	15	0.3889	0.0276	0.0261	0.0126	0.0290	6.71%	3.24%	7.45%	2.298
131.05	Methionine, PAO Pre-col AQC Der (%)	7	7	0.3563	0.0602	0.0594	0.0137	0.0610	16.68%	3.83%	17.11%	4.465
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	14	12	1.102	0.0676	0.0439	0.0162	0.0468	3.95%	1.45%	4.21%	2.894
132.05	Phenylalanine, Pre-col AQC Der (%)	6	5	1.061	0.0791	0.0790	0.0063	0.0792	7.45%	0.59%	7.47%	12.59
133.00	Proline, Post-col Ninhydrin Der (%)	15	14	1.273	0.0750	0.0545	0.0189	0.0577	4.24%	1.47%	4.48%	3.055
133.05	Proline, Pre-col AQC Der (%)	6	5	1.276	0.0870	0.0663	0.0084	0.0668	5.31%	0.67%	5.35%	7.984
134.00	Serine, Post-col Ninhydrin Der (%)	15	15	1.109	0.0575	0.0560	0.0183	0.0589	5.05%	1.65%	5.31%	3.213
134.05	Serine, Pre-col AQC Der (%)	6	5	1.053	0.1497	0.1116	0.0132	0.1124	10.16%	1.20%	10.23%	8.528
135.00	Threonine, Post-col Ninhydrin Der (%)	15	15	0.8684	0.0377	0.0367	0.0120	0.0386	4.23%	1.38%	4.45%	3.226
135.05	Threonine, Pre-col AQC Der (%)	6	6	0.8046	0.0822	0.0812	0.0178	0.0831	10.09%	2.22%	10.33%	4.664
136.00	Tryptophan, Alka-Hydrol Post-col Ninhydrin Der (%)	5	5	0.3174	0.0357	0.0356	0.0045	0.0359	11.21%	1.43%	11.30%	7.917
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	7	6	0.3091	0.0152	0.0053	0.0073	0.0090	1.74%	2.41%	2.97%	1.233
137.00	Tyrosine, Post-col Ninhydrin Der (%)	14	13	0.7595	0.0725	0.0543	0.0169	0.0569	7.27%	2.27%	7.62%	3.361
137.05	Tyrosine, Pre-col AQC Der (%)	6	6	0.7418	0.1077	0.1070	0.0178	0.1084	14.42%	2.40%	14.62%	6.092
138.00	Valine, Post-col Ninhydrin Der (%)	14	14	1.064	0.0514	0.0492	0.0210	0.0535	4.63%	1.98%	5.03%	2.544
351.03	Chlortetracycline, LC (UV or FL) (ppm)	9	8	169.2	28.44	14.73	9.386	17.46	8.31%	5.29%	9.85%	1.861
400.01	Water Activity, Aqualab chilled mirror (Units)	12	11	0.5826	0.0263	0.0263	0.0017	0.0264	4.52%	0.30%	4.53%	15.10

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