

**AAFCO**  
Proficiency Testing Program



**Animal Feed Scheme**  
**Cattle Feed, Medicated**  
**Test Material Code # 202028**

**Method Summary Report**  
(Precision Report Follows)

**# Labs Reporting: 184**  
**# Methods Reported: 408**  
**Issue Date : 09/30/2020**

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	0.5000							
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	49	47	9.294	0.2353	9.303	0.2167	0.0395	2.33%	0.1013	2.86%
001.99	Loss on Drying, Miscellaneous (%)	20	19	9.250	0.4900	9.315	0.3182	0.0913	3.42%	0.0981	2.86%
001.03	Loss on Drying, Low temp. methods (%)	7	6	9.272	0.2748	9.272	0.3117	0.1590	3.36%	0.0273	2.86%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	3	3	9.344	0.0396	9.344	0.0396	0.0229	0.42%	0.0787	2.86%
001.05	Loss on Drying, LECO (%)	2	2	9.667	0.5986						
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	118	114	14.85	0.3140	14.86	0.2901	0.0340	1.95%	0.1850	2.59%
002.05	Protein, Crude, Copper, Boric Acid (%)	30	29	14.57	0.2046	14.59	0.1747	0.0406	1.20%	0.1109	2.62%
002.01	Protein, Crude, Auto Kjeh-Foss (%)	18	18	14.71	0.3859	14.66	0.2843	0.0838	1.94%	0.1008	2.61%
002.11	Protein, Crude, NIR (%)	5	4	17.90	1.910	17.90	1.910	0.9550	10.67%	0.0425	2.36%
002.04	Protein, Crude, Copper Catalyst (%)	2	2	11.65	4.165						
002.00	Protein, Crude, Crude (%)	1	1	14.88							
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	1	1	14.57							
002.08	Protein, Crude, Cu/Ti (%)	1	1	14.72							
002.99	Protein, Crude, Miscellaneous (%)	1	1	14.24							
003.14	Fat, Crude, Ankom (%)	58	58	3.981	0.3652	3.950	0.2899	0.0476	7.34%	0.1240	3.25%
003.10	Fat, Crude, Randall, Pet Ether (%)	29	28	3.949	0.2564	3.932	0.2021	0.0477	5.14%	0.1003	3.25%
003.06	Fat, Crude, Pet Ether (%)	17	17	4.038	0.4425	4.095	0.3202	0.0971	7.82%	0.1156	3.24%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	14	4.369	0.4554	4.345	0.4599	0.1536	10.58%	0.1078	3.21%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	11	11	4.204	0.3919	4.210	0.3936	0.1483	9.35%	0.1176	3.22%
003.13	Fat, Crude, Randall, Hexane Ext. (%)	9	8	4.432	1.036	4.108	0.1834	0.0810	4.46%	0.0398	3.23%
003.11	Fat, Crude, NIR (%)	5	5	4.175	1.024	4.175	1.024	0.4581	24.54%	0.0580	3.23%
003.12	Fat, Crude, Hexane Ext (%)	2	2	4.238	0.4985						
003.99	Fat, Crude, Miscellaneous (%)	2	2	4.250	0.7425						
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	1	1	4.420							
004.07	Fiber, Crude, ANKOM (%)	72	70	15.28	1.142	15.23	1.018	0.1521	6.69%	0.3612	2.56%
004.06	Fiber, Crude, Fibertec (%)	22	22	15.19	1.315	14.96	0.8655	0.2307	5.79%	0.2033	2.59%
004.00	Fiber, Crude, Asbestos Free (%)	13	13	15.12	1.223	15.11	1.104	0.3828	7.31%	0.3581	2.57%
004.03	Fiber, Crude, Fritted Glass (%)	5	5	14.65	1.145	14.65	1.145	0.5120	7.82%	0.2180	2.61%

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004.11	Fiber, Crude, NIR (%)	4	3	14.80	0.5537	14.80	0.5537	0.3196	3.74%	0.0700	2.60%
004.01	Fiber, Crude, Sing Filt (%)	2	2	13.39	0.6576						
004.99	Fiber, Crude, Miscellaneous (%)	1	1	15.18							
005.00	Ash, 2h @ 600°C (%)	87	85	12.25	0.4406	12.26	0.4641	0.0629	3.79%	0.1320	2.74%
005.05	Ash, 3h @ 550°C (%)	36	35	12.82	0.3543	12.85	0.3157	0.0667	2.46%	0.1051	2.72%
005.99	Ash, Miscellaneous (%)	8	8	12.41	0.7683	12.53	0.5714	0.2525	4.56%	0.1388	2.73%
005.11	Ash, NIR (%)	3	3	8.327	1.511	8.327	1.511	0.8724	18.15%	0.1067	2.91%
005.02	Ash, LECO (%)	2	2	12.87	0.4632						
006.00	Total Sugars, As sucrose (%)	3	3	2.577	0.2303	2.577	0.2303	0.1629	8.94%	0.1183	3.47%
006.99	Total Sugars, Miscellaneous (%)	1	1	3.300							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	44	42	20.47	1.863	20.53	1.980	0.3818	9.64%	0.3492	2.21%
008.02	Fiber, Acid Detergent, Crucible (%)	10	10	21.26	2.080	21.36	2.153	0.8512	10.08%	0.3271	2.16%
008.05	Fiber, Acid Detergent, Acid Detergent-Hach (%)	1	1	23.45							
008.99	Fiber, Acid Detergent, Miscellaneous (%)	1	1	18.40							
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	42	41	35.28	2.077	35.39	1.866	0.3642	5.27%	0.4859	1.68%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	11	10	36.25	1.679	36.20	1.490	0.5891	4.12%	0.5354	1.66%
009.04	Fiber, Neutral Detergent, Neutral Det-No ENZ Pretreat (%)	1	1	40.89							
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	34.09							
010.99	Moisture, Miscellaneous (%)	16	15	9.383	0.4943	9.375	0.5421	0.1750	5.78%	0.0811	2.86%
010.03	Moisture, Karl-Fischer (%)	2	2	9.005	0.7354						
010.11	Moisture, NIR (%)	2	2	10.05	0.1697						
011.01	Loss on Drying, 135°C 2hr (%)	63	62	10.46	0.6384	10.49	0.6177	0.0981	5.89%	0.1198	2.81%
011.99	Loss on Drying, High Temp. Methods Miscellaneous (%)	4	3	9.923	0.7110	9.923	0.7110	0.4105	7.17%	0.0533	2.83%
011.02	Loss on Drying, 130°C for 2 hours (%)	2	2	10.40	0.4455						
012.00	Starch, Polarimetric (Ewers) (%)	13	12	13.82	0.4050	13.81	0.4319	0.1559	3.13%	0.1967	2.69%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	13.36	1.556	13.30	1.625	0.6422	12.22%	0.4949	2.71%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	5	5	12.95	1.700	12.95	1.700	0.7601	13.12%	0.3470	2.72%
012.11	Starch, NIR (%)	3	3	24.53	14.41	24.53	14.41	8.318	58.74%	0.4633	2.02%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	2	2	25.65	16.47						
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	13.18							
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	17	16	4.710	0.6640	4.714	0.6528	0.2040	13.85%	0.2354	3.17%
013.02	Fat, Acid Pretreat, Mojonniier, Bak Ext (%)	17	16	5.305	0.4287	5.305	0.4861	0.1519	9.16%	0.0819	3.11%
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	8	8	5.650	0.8201	5.649	0.9300	0.4110	16.46%	0.3745	3.08%
013.10	Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%)	4	4	4.790	0.2508	4.790	0.2508	0.1254	5.24%	0.0300	3.16%
013.08	Fat, Base Pretreat, Roese-Gottlieb Modified (%)	1	1	2.465							
015.43	Aluminum, ICP, Microwave (ppm)	7	6	92.91	18.16	92.91	20.59	10.51	22.16%	2.182	8.09%
015.41	Aluminum, ICP, Dry ash (ppm)	5	4	76.09	29.53	76.09	29.53	14.77	38.81%	1.144	8.33%
015.42	Aluminum, ICP, Open vessel (ppm)	2	2	53.30	7.990						
015.53	Aluminum, ICP-MS, Microwave (ppm)	2	2	110.3	3.889						
015.52	Aluminum, ICP-MS, Open vessel (ppm)	1	1	76.75							

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017.42	Boron, ICP, Open vessel (ppm)	6	6	5.847	1.394	5.738	1.320	0.6738	23.01%	0.5205	12.30%
017.41	Boron, ICP, Dry ash (ppm)	5	4	5.485	1.115	5.485	1.115	0.5577	20.34%	0.2379	12.38%
017.43	Boron, ICP, Microwave (ppm)	5	4	5.927	1.781	5.927	1.781	0.8906	30.05%	0.8562	12.24%
017.52	Boron, ICP-MS, Open vessel (ppm)	1	1	7.415							
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	5.240							
019.41	Calcium, ICP, Dry ash (%)	26	26	2.177	0.0928	2.177	0.1051	0.0258	4.83%	0.0617	3.56%
019.43	Calcium, ICP, Microwave (%)	26	26	2.244	0.2371	2.272	0.1688	0.0414	7.43%	0.0717	3.54%
019.42	Calcium, ICP, Open vessel (%)	19	19	2.244	0.1440	2.243	0.1356	0.0389	6.04%	0.0761	3.54%
019.31	Calcium, AAS, Dry ash (%)	17	16	2.215	0.1119	2.213	0.1243	0.0388	5.62%	0.0304	3.55%
019.00	Calcium, Ox-Mn04 Vol. (%)	13	13	2.156	0.0985	2.158	0.0869	0.0301	4.03%	0.0469	3.56%
019.08	Calcium, EDTA (%)	7	7	2.209	0.1588	2.199	0.1393	0.0658	6.33%	0.0137	3.55%
019.99	Calcium, Miscellaneous (%)	6	6	2.113	0.2141	2.113	0.2428	0.1239	11.49%	0.0867	3.57%
019.52	Calcium, ICP-MS, Open vessel (%)	4	4	2.234	0.2289	2.234	0.2289	0.1144	10.25%	0.0852	3.54%
019.53	Calcium, ICP-MS, Microwave (%)	4	3	2.138	0.0465	2.138	0.0465	0.0268	2.17%	0.0433	3.57%
019.09	Calcium, Ion-selective electrode (%)	1	1	1.948							
019.32	Calcium, AAS, Open vessel (%)	1	1	2.270							
019.44	Calcium, ICP, Dry ash (%)	1	1	2.165							
021.43	Cobalt, ICP, Microwave (ppm)	7	7	2.206	0.2379	2.202	0.1843	0.0871	8.37%	0.2113	14.21%
021.53	Cobalt, ICP-MS, Microwave (ppm)	6	6	1.999	0.4774	2.122	0.2229	0.1138	10.51%	0.1330	14.28%
021.41	Cobalt, ICP, Dry ash (ppm)	5	5	1.776	0.4763	1.776	0.4763	0.2130	26.82%	0.0765	14.67%
021.52	Cobalt, ICP-MS, Open vessel (ppm)	4	4	1.661	0.4073	1.661	0.4073	0.2037	24.52%	0.1675	14.82%
021.42	Cobalt, ICP, Open vessel (ppm)	3	3	1.780	0.5430	1.780	0.5430	0.3135	30.50%	0.2227	14.67%
021.31	Cobalt, AAS, Dry ash (ppm)	2	2	1.910	0.0849						
021.51	Cobalt, ICP-MS, Dry ash (ppm)	1	1	1.989							
022.43	Copper, ICP, Microwave (ppm)	23	23	47.36	8.819	48.30	4.969	1.295	10.29%	2.517	8.92%
022.42	Copper, ICP, Open vessel (ppm)	20	20	47.97	3.539	47.99	3.954	1.105	8.24%	3.008	8.93%
022.41	Copper, ICP, Dry ash (ppm)	20	19	30.00	7.431	29.19	6.484	1.860	22.22%	1.053	9.63%
022.31	Copper, AAS, Dry ash (ppm)	9	9	32.71	9.697	32.71	11.00	4.582	33.61%	1.043	9.46%
022.53	Copper, ICP-MS, Microwave (ppm)	5	5	47.88	6.098	47.88	6.098	2.727	12.74%	6.600	8.94%
022.33	Copper, AAS, Microwave (ppm)	4	4	33.84	20.39	33.84	20.39	10.20	60.26%	4.406	9.42%
022.52	Copper, ICP-MS, Open vessel (ppm)	3	3	45.94	2.830	45.94	2.830	1.634	6.16%	3.550	8.99%
022.99	Copper, Miscellaneous (ppm)	3	3	38.75	13.05	38.75	13.05	7.534	33.68%	2.833	9.23%
022.44	Copper, ICP, Dry ash (ppm)	2	2	36.60	9.336						
022.35	Copper, AAS, Dry ash (ppm)	1	1	31.11							
024.52	Iodine, ICP-MS, Open vessel (ppm)	1	1	2.430							
025.41	Iron, ICP, Dry ash (ppm)	22	22	259.9	26.13	260.2	28.58	7.616	10.98%	9.185	6.93%
025.43	Iron, ICP, Microwave (ppm)	23	22	276.0	51.16	280.4	39.18	10.44	13.97%	10.18	6.85%
025.42	Iron, ICP, Open vessel (ppm)	16	15	242.8	60.88	253.9	35.62	11.50	14.03%	6.427	6.95%
025.31	Iron, AAS, Dry ash (ppm)	12	12	274.3	25.69	275.4	26.64	9.613	9.67%	6.464	6.87%
025.52	Iron, ICP-MS, Open vessel (ppm)	3	3	195.6	82.55	195.6	82.55	58.37	42.21%	12.38	7.23%

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025.53	Iron, ICP-MS, Microwave (ppm)	3	3	217.3	97.32	217.3	97.32	56.19	44.78%	10.00	7.12%
025.33	Iron, AAS, Microwave (ppm)	2	2	262.5	35.24						
025.99	Iron, Miscellaneous (ppm)	2	2	274.8	22.27						
027.43	Magnesium, ICP, Microwave (%)	21	21	0.3098	0.0361	0.3159	0.0228	0.0062	7.21%	0.0085	4.76%
027.42	Magnesium, ICP, Open vessel (%)	19	19	0.3096	0.0169	0.3094	0.0151	0.0043	4.87%	0.0085	4.77%
027.41	Magnesium, ICP, Dry ash (%)	17	17	0.3076	0.0128	0.3082	0.0131	0.0040	4.26%	0.0061	4.77%
027.31	Magnesium, AAS, Dry ash (%)	10	9	0.3121	0.0175	0.3147	0.0100	0.0042	3.17%	0.0033	4.76%
027.53	Magnesium, ICP-MS, Microwave (%)	4	4	0.2905	0.0389	0.2905	0.0389	0.0195	13.40%	0.0020	4.82%
027.99	Magnesium, Miscellaneous (%)	4	4	0.3213	0.0256	0.3213	0.0256	0.0128	7.98%	0.0050	4.75%
027.33	Magnesium, AAS, Microwave (%)	3	3	0.2797	0.0786	0.2797	0.0786	0.0454	28.10%	0.0065	4.85%
027.52	Magnesium, ICP-MS, Open vessel (%)	3	3	0.3133	0.0110	0.3133	0.0110	0.0064	3.51%	0.0132	4.76%
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.3450							
027.44	Magnesium, ICP, Dry ash (%)	1	1	0.3055							
028.43	Manganese, ICP, Microwave (ppm)	22	22	189.7	24.63	193.3	13.49	3.596	6.98%	6.366	7.24%
028.41	Manganese, ICP, Dry ash (ppm)	19	19	169.3	11.36	169.2	12.61	3.617	7.45%	6.093	7.39%
028.42	Manganese, ICP, Open vessel (ppm)	20	19	191.2	10.32	190.8	10.08	2.891	5.28%	3.368	7.26%
028.31	Manganese, AAS, Dry ash (ppm)	10	9	179.2	14.48	176.1	5.768	2.404	3.28%	1.654	7.35%
028.53	Manganese, ICP-MS, Microwave (ppm)	5	4	182.5	4.894	182.5	4.894	2.447	2.68%	8.160	7.31%
028.33	Manganese, AAS, Microwave (ppm)	3	3	177.2	22.25	177.2	22.25	12.84	12.56%	11.37	7.34%
028.99	Manganese, Miscellaneous (ppm)	3	3	180.8	36.52	180.8	36.52	21.08	20.19%	11.00	7.32%
028.44	Manganese, ICP, Dry ash (ppm)	2	2	158.8	6.131						
028.52	Manganese, ICP-MS, Open vessel (ppm)	2	2	200.5	3.500						
028.34	Manganese, AAS, Dry ash (ppm)	1	1	155.7							
031.01	Phosphorus, Photometric (%)	35	34	0.7340	0.0732	0.7423	0.0344	0.0074	4.63%	0.0166	4.18%
031.41	Phosphorus, ICP, Dry ash (%)	24	24	0.7470	0.0420	0.7423	0.0283	0.0072	3.81%	0.0140	4.18%
031.43	Phosphorus, ICP, Microwave (%)	24	24	0.7560	0.0507	0.7571	0.0443	0.0113	5.85%	0.0155	4.17%
031.42	Phosphorus, ICP, Open vessel (%)	20	19	0.7347	0.0418	0.7346	0.0474	0.0136	6.46%	0.0144	4.19%
031.99	Phosphorus, Miscellaneous (%)	5	5	0.7620	0.1613	0.7620	0.1613	0.0721	21.17%	0.0140	4.17%
031.53	Phosphorus, ICP-MS, Microwave (%)	4	4	0.7099	0.1160	0.7099	0.1160	0.0580	16.34%	0.0318	4.21%
031.52	Phosphorus, ICP-MS, Open vessel (%)	3	3	0.7473	0.0087	0.7473	0.0087	0.0050	1.17%	0.0187	4.18%
031.03	Phosphorus, Autoanalyzer (%)	2	2	0.7393	0.0202						
031.44	Phosphorus, ICP, Dry ash (%)	2	2	0.7405	0.0198						
031.00	Phosphorus, Vol (%)	1	1	0.7250							
031.02	Phosphorus, GQMP (AOAC 935.13-Extraction) (%)	1	1	0.7850							
031.06	Phosphorus, Hach Method (%)	1	1	0.7400							
032.43	Potassium, ICP, Microwave (%)	25	25	0.9463	0.0994	0.9562	0.0628	0.0157	6.57%	0.0197	4.03%
032.41	Potassium, ICP, Dry ash (%)	22	22	0.8099	0.0960	0.8122	0.0942	0.0251	11.60%	0.0200	4.13%
032.42	Potassium, ICP, Open vessel (%)	19	19	0.9366	0.0540	0.9380	0.0582	0.0167	6.20%	0.0310	4.04%
032.31	Potassium, AAS, Dry ash (%)	11	11	0.8300	0.0893	0.8257	0.0911	0.0344	11.04%	0.0117	4.12%
032.99	Potassium, Miscellaneous (%)	5	5	0.9039	0.0796	0.9039	0.0796	0.0356	8.81%	0.0171	4.06%

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032.53	Potassium, ICP-MS, Microwave (%)	4	4	0.8805	0.0936	0.8805	0.0936	0.0468	10.63%	0.0380	4.08%
032.52	Potassium, ICP-MS, Open vessel (%)	3	3	0.9349	0.0483	0.9349	0.0483	0.0279	5.17%	0.0232	4.04%
032.44	Potassium, ICP, Dry ash (%)	2	2	0.8755	0.0891						
032.32	Potassium, AAS, Open vessel (%)	1	1	0.9900							
032.33	Potassium, AAS, Microwave (%)	1	1	11.50							
033.01	Salt as chloride, Poten Cl (%)	28	27	1.063	0.0348	1.062	0.0211	0.0051	1.99%	0.0131	3.96%
033.00	Salt as chloride, Sol Cl (%)	26	25	1.033	0.0526	1.035	0.0553	0.0138	5.34%	0.0168	3.98%
033.99	Salt, Miscellaneous (%)	10	10	0.9932	0.1414	1.003	0.1369	0.0541	13.65%	0.0237	4.00%
033.03	Salt as chloride, Quantab (%)	5	5	0.9530	0.1858	0.9530	0.1858	0.0831	19.50%	0.0420	4.03%
033.05	Salt as chloride, Ion Sel Electrode (%)	2	2	1.078	0.0389						
034.53	Selenium, ICP-MS, Microwave (ppm)	11	11	1.184	0.1595	1.177	0.1593	0.0600	13.53%	0.1024	15.61%
034.43	Selenium, ICP, Microwave (ppm)	7	5	1.045	0.3790	1.045	0.3790	0.2119	36.28%	0.0584	15.89%
034.41	Selenium, ICP, Dry ash (ppm)	4	4	1.071	0.1998	1.071	0.1998	0.0999	18.66%	0.1008	15.83%
034.04	Selenium, AA, Hydride (ppm)	3	3	1.102	0.1700	1.102	0.1700	0.0981	15.43%	0.1497	15.76%
034.52	Selenium, ICP-MS, Open vessel (ppm)	3	3	1.024	0.0862	1.024	0.0862	0.0497	8.41%	0.0440	15.94%
034.33	Selenium, AAS, Microwave (ppm)	1	1	0.5300							
034.42	Selenium, ICP, Open vessel (ppm)	1	1	1.350							
034.99	Selenium, Miscellaneous (ppm)	1	1	3.020							
035.41	Sodium, ICP, Dry ash (%)	24	23	0.3944	0.0340	0.3938	0.0361	0.0094	9.17%	0.0119	4.60%
035.43	Sodium, ICP, Microwave (%)	23	23	0.4254	0.0532	0.4348	0.0249	0.0065	5.73%	0.0133	4.53%
035.42	Sodium, ICP, Open vessel (%)	18	18	0.4289	0.0260	0.4291	0.0280	0.0083	6.53%	0.0155	4.54%
035.31	Sodium, AAS, Dry ash (%)	12	12	0.3945	0.0409	0.3979	0.0317	0.0114	7.96%	0.0076	4.59%
035.53	Sodium, ICP-MS, Microwave (%)	4	4	0.3958	0.0420	0.3958	0.0420	0.0210	10.61%	0.0385	4.60%
035.99	Sodium, Miscellaneous (%)	4	4	0.3450	0.1829	0.3450	0.1829	0.0915	53.03%	0.0075	4.69%
035.52	Sodium, ICP-MS, Open vessel (%)	3	3	0.4268	0.0229	0.4268	0.0229	0.0132	5.36%	0.0209	4.55%
035.01	Sodium, Ion-selective electrode (%)	1	1	0.4140							
035.02	Sodium, Em Spect (%)	1	1	0.4050							
035.05	Sodium, Flame Emission (%)	1	1	0.4150							
035.32	Sodium, AAS, Open vessel (%)	1	1	0.4200							
035.33	Sodium, AAS, Microwave (%)	1	1	0.4600							
036.42	Sulfur, ICP, Open vessel (%)	18	18	0.3468	0.0306	0.3474	0.0334	0.0098	9.60%	0.0108	4.69%
036.43	Sulfur, ICP, Microwave (%)	13	13	0.3620	0.0513	0.3646	0.0468	0.0162	12.83%	0.0142	4.66%
036.04	Sulfur, LECO (%)	3	3	0.3338	0.0330	0.3338	0.0330	0.0233	9.89%	0.0003	4.72%
036.52	Sulfur, ICP-MS, Open vessel (%)	3	3	0.3671	0.0381	0.3671	0.0381	0.0220	10.38%	0.0091	4.65%
036.99	Sulfur, Miscellaneous (%)	2	2	0.3075	0.0035						
036.53	Sulfur, ICP-MS, Microwave (%)	1	1	0.3540							
037.43	Zinc, ICP, Microwave (ppm)	23	22	194.9	26.48	198.4	17.64	4.701	8.89%	6.082	7.22%
037.41	Zinc, ICP, Dry ash (ppm)	20	19	163.7	20.97	163.7	21.24	6.090	12.97%	6.266	7.43%
037.42	Zinc, ICP, Open vessel (ppm)	19	19	195.7	15.12	195.2	15.52	4.451	7.95%	6.298	7.23%
037.31	Zinc, AAS, Dry ash (ppm)	10	10	179.6	44.37	174.9	38.42	15.19	21.96%	2.593	7.35%

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037.53	Zinc, ICP-MS, Microwave (ppm)	5	5	192.9	23.07	192.9	23.07	10.32	11.96%	8.894	7.25%
037.99	Zinc, Miscellaneous (ppm)	4	4	179.9	27.18	179.9	27.18	13.59	15.11%	6.261	7.32%
037.33	Zinc, AAS, Microwave (ppm)	3	3	195.7	28.15	195.7	28.15	16.25	14.38%	0.7300	7.23%
037.52	Zinc, ICP-MS, Open vessel (ppm)	3	3	184.8	40.37	184.8	40.37	23.31	21.85%	24.73	7.29%
037.44	Zinc, ICP, Dry ash (ppm)	2	2	155.0	17.02						
038.43	Molybdenum, ICP, Microwave (ppm)	8	7	1.721	0.1989	<b>1.721</b>	0.2255	0.1066	13.11%	0.0961	14.74%
038.42	Molybdenum, ICP, Open vessel (ppm)	4	4	2.207	0.6058	2.207	0.6058	0.3029	27.45%	0.2628	14.20%
038.41	Molybdenum, ICP, Dry ash (ppm)	3	3	1.505	0.2072	1.505	0.2072	0.1197	13.77%	0.0198	15.04%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	3	3	1.852	0.1298	1.852	0.1298	0.0750	7.01%	0.0767	14.58%
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	2	2	1.153	0.1167						
040.52	Barium, ICP-MS, Open vessel (ppm)	1	1	8.430							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	0.8945							
042.00	Chloride, Titrimetric (%)	2	2	0.6193	0.0152						
042.02	Chloride, Ion Chromatography (%)	2	2	3.190	3.578						
042.99	Chloride, Miscellaneous (%)	2	2	0.5450	0.1768						
095.99	Methoprene, Miscellaneous (ppm)	1	1	1.462							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	1,525							
102.01	Niacin, Microbiological (ppm)	1	1	72.30							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	7.295							
104.00	Riboflavin, Fluorometric (ppm)	1	1	4.500							
104.03	Riboflavin, LC (ppm)	1	1	1.025							
105.00	Thiamine, LC (ppm)	1	1	2.015							
105.01	Thiamine, Fluorometer (ppm)	1	1	2.735							
106.02	Vitamin A, LC (KU / kg)	14	<b>14</b>	2.485	1.125	<b>2.472</b>	1.250	0.4175	50.54%	0.7055	
106.00	Vitamin A, Color (KU / kg)	2	2	2.092	0.3486						
106.01	Vitamin A, UV (KU / kg)	1	1	3.715							
107.00	Vitamin B12, Microbiological (ppb)	1	1	77.20							
108.02	Vitamin D3, LC (KU / kg)	6	4	2.455	0.6367	2.455	0.6367	0.3980	25.94%	0.1250	
108.99	Vitamin D3, Miscellaneous (KU / kg)	2	2	2.758	0.2935						
109.02	Vitamin E, LC (IU / kg)	11	<b>10</b>	19.15	4.762	<b>18.88</b>	4.760	1.881	25.21%	0.9210	
111.00	Vitamin C, Phosphorylated, LC (ppm)	1		4.400							
112.01	Pyridoxine, LC (µg / g)	1	1	3.365							
113.01	Folic Acid, Micro (ppm)	1	1	0.5375							
114.01	Biotin, Microbiological (ppm)	1	1	0.2380							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	1	1	0.5700							
118.99	Peroxide value, Miscellaneous (meq/kg)	1	1	1.985							
120.00	Alanine, Post-col Ninhydrin Der (%)	19	<b>18</b>	0.8574	0.0205	<b>0.8582</b>	0.0204	0.0060	2.38%	0.0087	4.09%
120.05	Alanine, Pre-col AQC Der (%)	9	<b>9</b>	0.8141	0.0576	<b>0.8162</b>	0.0605	0.0252	7.41%	0.0238	4.12%
120.99	Alanine, Miscellaneous (%)	4	4	0.8525	0.1024	0.8525	0.1024	0.0512	12.02%	0.0125	4.10%
120.02	Alanine, Post-col OPA Der (%)	1	1	0.8385							

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121.00	Arginine, Post-col Ninhydrin Der (%)	19	18	0.7477	0.0277	<b>0.7478</b>	0.0314	0.0092	4.20%	0.0088	4.18%
121.05	Arginine, Pre-col AQC Der (%)	9	9	0.6778	0.2583	<b>0.7475</b>	0.0778	0.0324	10.40%	0.0172	4.18%
121.99	Arginine, Miscellaneous (%)	3	3	0.7183	0.0382	0.7183	0.0382	0.0270	5.32%	0.0133	4.20%
121.02	Arginine, Post-col OPA Der (%)	1	1	0.7210							
122.00	Aspartic, Post-col Ninhydrin Der (%)	19	19	0.9956	0.0357	<b>0.9963</b>	0.0311	0.0089	3.12%	0.0124	4.00%
122.05	Aspartic, Pre-col AQC Der (%)	9	8	0.9876	0.0874	<b>0.9968</b>	0.0764	0.0338	7.66%	0.0280	4.00%
122.99	Aspartic, Miscellaneous (%)	4	4	1.063	0.0929	1.063	0.0929	0.0464	8.74%	0.0175	3.96%
122.02	Aspartic, Post-col OPA Der (%)	1	1	0.9435							
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin (%)	19	19	0.2788	0.0238	<b>0.2789</b>	0.0171	0.0049	6.12%	0.0083	4.85%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	8	8	0.3300	0.0975	<b>0.2991</b>	0.0160	0.0071	5.36%	0.0140	4.80%
124.99	Cysteine/Cystine, Miscellaneous (%)	3	3	0.2300	0.0050	0.2300	0.0050	0.0029	2.17%	0.0100	4.99%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	1	1	0.3010							
125.00	Glutamic, Post-col Ninhydrin Der (%)	19	19	2.466	0.1188	<b>2.466</b>	0.1347	0.0386	5.46%	0.0276	3.49%
125.05	Glutamic, Pre-col AQC Der (%)	9	9	2.397	0.1976	<b>2.384</b>	0.1935	0.0806	8.12%	0.0505	3.51%
125.99	Glutamic, Miscellaneous (%)	4	3	2.395	0.0444	2.395	0.0444	0.0257	1.86%	0.0400	3.51%
125.02	Glutamic, Post-col OPA Der (%)	1	1	2.353							
126.00	Glycine, Post-col Ninhydrin Der (%)	19	19	0.6422	0.0186	<b>0.6422</b>	0.0209	0.0060	3.26%	0.0078	4.28%
126.05	Glycine, Pre-col AQC Der (%)	9	8	0.6762	0.0868	<b>0.6528</b>	0.0304	0.0134	4.65%	0.0196	4.26%
126.99	Glycine, Miscellaneous (%)	4	2	0.6800	0.0000	0.6800	0.0000			0.0000	4.24%
126.02	Glycine, Post-col OPA Der (%)	1	1	0.6440							
127.00	Histidine, Post-col Ninhydrin Der (%)	19	19	0.3809	0.0333	<b>0.3777</b>	0.0235	0.0067	6.21%	0.0084	4.63%
127.05	Histidine, Pre-col AQC Der (%)	9	9	0.3709	0.0390	<b>0.3707</b>	0.0378	0.0158	10.21%	0.0100	4.64%
127.99	Histidine, Miscellaneous (%)	4	4	0.3894	0.0547	0.3894	0.0547	0.0274	14.05%	0.0088	4.61%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.3645							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	19	19	0.4679	0.0338	<b>0.4676</b>	0.0377	0.0108	8.06%	0.0082	4.48%
128.05	Isoleucine, Pre-col AQC Der (%)	9	9	0.4489	0.0605	<b>0.4531</b>	0.0585	0.0244	12.92%	0.0122	4.51%
128.99	Isoleucine, Miscellaneous (%)	4	4	0.4738	0.0621	0.4738	0.0621	0.0311	13.11%	0.0175	4.48%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.4530							
129.00	Leucine, Post-col Ninhydrin Der (%)	19	19	1.219	0.0556	<b>1.221</b>	0.0390	0.0112	3.19%	0.0123	3.88%
129.05	Leucine, Pre-col AQC Der (%)	9	9	1.170	0.0754	<b>1.170</b>	0.0855	0.0356	7.31%	0.0286	3.91%
129.99	Leucine, Miscellaneous (%)	4	4	1.181	0.1580	1.181	0.1580	0.0790	13.38%	0.0500	3.90%
129.02	Leucine, Post-col OPA Der (%)	1	1	1.197							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	19	18	0.4925	0.0238	<b>0.4909</b>	0.0228	0.0067	4.64%	0.0093	4.45%
130.05	L-Lysine, Pre-col AQC Der (%)	9	9	0.4399	0.1516	<b>0.4826</b>	0.0377	0.0157	7.80%	0.0167	4.46%
130.99	L-Lysine, Miscellaneous (%)	4	4	0.4963	0.1707	0.4963	0.1707	0.0854	34.40%	0.0150	4.44%
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.5255							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	19	19	0.2491	0.0174	<b>0.2473</b>	0.0092	0.0027	3.74%	0.0051	4.94%
131.05	Methionine, PAO Pre-col AQC Der (%)	9	8	0.2480	0.0601	<b>0.2467</b>	0.0652	0.0288	26.44%	0.0035	4.94%
131.99	Methionine, Miscellaneous (%)	4	4	0.2413	0.0284	0.2413	0.0284	0.0142	11.77%	0.0075	4.95%
131.02	Methionine, PAO Post-col OPA Der (%)	1	1	0.2440							

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132.00	Phenylalanine, Post-col Ninhydrin Der (%)	19	18	0.6041	0.0442	0.5949	0.0264	0.0078	4.44%	0.0102	4.32%
132.05	Phenylalanine, Pre-col AQC Der (%)	9	9	0.5962	0.0612	0.5907	0.0522	0.0217	8.83%	0.0292	4.33%
132.99	Phenylalanine, Miscellaneous (%)	4	4	0.6038	0.0180	0.6038	0.0180	0.0090	2.98%	0.0125	4.32%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.5970							
133.00	Proline, Post-col Ninhydrin Der (%)	19	19	1.072	0.1308	1.046	0.0517	0.0148	4.94%	0.0300	3.97%
133.05	Proline, Pre-col AQC Der (%)	9	9	1.071	0.0591	1.071	0.0670	0.0279	6.25%	0.0272	3.96%
133.99	Proline, Miscellaneous (%)	4	2	1.078	0.0106	1.078	0.0106			0.0050	3.96%
134.00	Serine, Post-col Ninhydrin Der (%)	19	19	0.6430	0.0354	0.6403	0.0298	0.0085	4.65%	0.0124	4.28%
134.05	Serine, Pre-col AQC Der (%)	9	8	0.6347	0.0294	0.6347	0.0333	0.0147	5.25%	0.0234	4.28%
134.99	Serine, Miscellaneous (%)	4	3	0.6783	0.0978	0.6783	0.0978	0.0691	14.41%	0.0033	4.24%
134.02	Serine, Post-col OPA Der (%)	1	1	0.5995							
135.00	Threonine, Post-col Ninhydrin Der (%)	19	18	0.5066	0.0233	0.5064	0.0181	0.0053	3.57%	0.0051	4.43%
135.05	Threonine, Pre-col AQC Der (%)	9	9	0.4896	0.0440	0.4944	0.0379	0.0158	7.67%	0.0201	4.45%
135.99	Threonine, Miscellaneous (%)	3	3	0.5417	0.0189	0.5417	0.0189	0.0134	3.49%	0.0033	4.39%
135.02	Threonine, Post-col OPA Der (%)	1	1	0.5090							
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	6	6	0.1555	0.0118	0.1555	0.0134	0.0068	8.61%	0.0032	5.29%
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	5	5	0.1589	0.0337	0.1589	0.0337	0.0150	21.18%	0.0068	5.28%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	3	3	0.1515	0.0074	0.1515	0.0074	0.0052	4.86%	0.0030	5.31%
136.05	Tryptophan, Pre-col AQC Der (%)	3	3	0.0981	0.0580	0.0981	0.0580	0.0335	59.13%	0.0021	5.67%
136.99	Tryptophan, Miscellaneous (%)	2	2	0.2363	0.1220						
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.1395							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	12	11	0.4133	0.0654	0.4156	0.0621	0.0234	14.94%	0.0064	4.56%
137.05	Tyrosine, Pre-col AQC Der (%)	9	9	0.5434	0.2910	0.4875	0.1126	0.0469	23.09%	0.0250	4.46%
137.99	Tyrosine, Miscellaneous (%)	4	4	0.4181	0.0808	0.4181	0.0808	0.0404	19.33%	0.0113	4.56%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.3785							
138.00	Valine, Post-col Ninhydrin Der (%)	19	19	0.6582	0.0633	0.6631	0.0390	0.0112	5.89%	0.0124	4.25%
138.05	Valine, Pre-col AQC Der (%)	8	8	0.6250	0.0844	0.6250	0.0957	0.0423	15.31%	0.0120	4.29%
138.99	Valine, Miscellaneous (%)	4	4	0.6863	0.0320	0.6863	0.0320	0.0160	4.66%	0.0175	4.23%
138.02	Valine, Post-col OPA Der (%)	1	1	0.6685							
139.00	Taurine, Post-col Ninhydrin Der (%)	1	1	0.0650							
139.05	Taurine, Pre-col AQC Der (%)	2	1	0.0970							
139.02	Taurine, Post-col OPA Der (%)	1		0.0100							
139.99	Taurine, Miscellaneous (%)	1		0.0100							
160.99	Fructose, Miscellaneous (%)	2	2	0.2185	0.0304						
160.10	Fructose, HPAEC PAD (%)	1	1	0.1473							
161.10	Galactose, HPAEC PAD (%)	1		0.0000							
162.99	Glucose, Miscellaneous (%)	2	2	0.2548	0.0569						
162.10	Glucose, HPAEC PAD (%)	1	1	0.1690							
163.10	Lactose, HPAEC PAD (%)	1		0.0000							
163.99	Lactose, Miscellaneous (%)	2		0.0000							

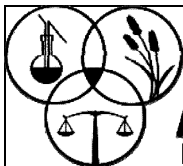


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164.10	Maltose, HPAEC PAD (%)	1	1	0.3305							
164.99	Maltose, Miscellaneous (%)	1		0.1500							
165.99	Sucrose, Miscellaneous (%)	2	2	0.7425	0.0601						
165.10	Sucrose, HPAEC PAD (%)	1	1	2.258							
166.99	Raffinose, Miscellaneous (%)	2	2	0.2050	0.0354						
166.10	Raffinose, HPAEC PAD (%)	1	1	0.5895							
167.10	Stachyose, HPAEC PAD (%)	1	1	1.272							
167.99	Stachyose, Miscellaneous (%)	2	1	0.1160							
345.04	Amprolium, LC-MS/MS (ppm)	3	2	0.1250	0.1669	0.1250	0.1669			0.0050	21.87%
351.03	Chlortetracycline, LC (UV or FL) (ppm)	7	7	132.2	11.95	132.2	13.55	6.399	10.25%	4.681	7.67%
351.05	Chlortetracycline, LC-MS/MS (ppm)	7	7	105.2	50.62	105.1	57.40	27.12	54.59%	6.268	7.94%
351.00	Chlortetracycline, Plate (ppm)	3	3	156.9	11.78	156.9	11.78	6.799	7.51%	8.502	7.47%
351.99	Chlortetracycline, Miscellaneous (ppm)	1	1	245.5							
354.04	Decoquinatate, LC-MS/MS (ppm)	5	4	0.3755	0.2272	0.3755	0.2272	0.1136	60.50%	0.0265	18.54%
354.02	Decoquinatate, LC (ppm)	2	2	0.5438	0.2033						
361.03	Lasalocid Sodium, LC (UV or FL) (ppm)	1	1	0.1700							
361.05	Lasalocid Sodium, LC-MS/MS (ppm)	4	1								
361.02	Lasalocid Sodium, LC (ppm)	1		0.1000							
365.05	Monensin, LC-MS/MS (ppm)	12	11	36.37	3.253	35.94	2.447	0.9224	6.81%	1.299	9.33%
365.03	Monensin, LC-PCD (ppm)	8	8	36.79	1.584	36.79	1.797	0.7940	4.88%	1.651	9.30%
365.02	Monensin, LC (ppm)	6	6	35.22	1.670	35.22	1.893	0.9661	5.37%	0.4400	9.36%
365.99	Monensin, Miscellaneous (ppm)	3	3	33.21	13.44	33.21	13.44	7.758	40.46%	2.453	9.44%
365.04	Monensin, LC-MS (ppm)	2	2	36.63	2.521						
365.00	Monensin, Plate (ppm)	1	1	38.15							
400.01	Water Activity, Aqualab chilled mirror (Units)	9	8	0.5989	0.0096	0.5989	0.0109	0.0048	1.81%	0.0019	
400.99	Water Activity, Miscellaneous (Units)	1	1	0.5980							
516.53	Arsenic, Total, ICP-MS, Microwave (ppm)	5	5	0.2079	0.0625	0.2079	0.0625	0.0279	30.05%	0.0178	20.26%
516.00	Arsenic, Total, AA, Hydride (ppm)	2	2	0.1793	0.0053						
516.43	Arsenic, Total, ICP, Microwave (ppm)	3	2	0.5833	0.3136	0.5833	0.3136			0.1155	17.35%
516.52	Arsenic, Total, ICP-MS, Open vessel (ppm)	2	2	0.1728	0.0103						
518.53	Cadmium, ICP-MS, Microwave (ppm)	5	5	0.0879	0.0113	0.0879	0.0113	0.0051	12.90%	0.0042	22.00%
518.43	Cadmium, ICP, Microwave (ppm)	3	3	1.066	1.667	1.066	1.667			0.0038	15.84%
518.41	Cadmium, ICP, Dry ash (ppm)	2	2	0.0852	0.0109						
518.52	Cadmium, ICP-MS, Open vessel (ppm)	2	2	0.0918	0.0025						
518.33	Cadmium, AAS, Microwave (ppm)	1	1	0.1817							
520.43	Chromium, ICP, Microwave (ppm)	4	4	12.79	7.131	12.79	7.131	3.566	55.75%	0.0314	10.90%
520.53	Chromium, ICP-MS, Microwave (ppm)	3	3	9.155	6.463	9.155	6.463	3.731	70.59%	1.297	11.46%
520.41	Chromium, ICP, Dry ash (ppm)	2	2	5.464	2.042						
520.42	Chromium, ICP, Open vessel (ppm)	2	2	12.22	1.525						
520.52	Chromium, ICP-MS, Open vessel (ppm)	1	1	2.650							

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
526.53	Lead, ICP-MS, Microwave (ppm)	4	3	0.1527	0.0090	0.1527	0.0090	0.0052	5.86%	0.0047	21.23%
526.41	Lead, ICP, Dry ash (ppm)	2	2	0.1274	0.0628						
526.52	Lead, ICP-MS, Open vessel (ppm)	2	2	0.1598	0.0138						
526.33	Lead, AAS, Microwave (ppm)	1	1	0.2805							
526.43	Lead, ICP, Microwave (ppm)	2	1	0.3545							
529.99	Mercury, Miscellaneous (ppb)	4	2	1.893	0.8588	1.893	0.8588			0.7745	22.00%
539.41	Nickel, ICP, Dry ash (ppm)	2	2	4.636	0.6447						
539.43	Nickel, ICP, Microwave (ppm)	2	2	8.859	2.533						
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	6.733	0.1308						
539.52	Nickel, ICP-MS, Open vessel (ppm)	1	1	1.815							
702.00	Butyric Acid (4:0), Miscellaneous GC (%)	1		0.0000							
704.00	Caproic Acid (6:0) , Miscellaneous GC (%)	1	1	0.0020							
706.01	Caprylic acid (8:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		0.0005							
708.01	Capric acid (10:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0010							
710.01	Lauric Acid (12:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0020							
710.99	Lauric Acid (12:0), Miscellaneous (% (w/w))	3									
714.01	Myristic Acid (14:0) , Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0085							
714.99	Myristic Acid (14:0) , Miscellaneous (% (w/w))	2	1	0.0150							
716.99	Palmitic Acid (16:0), Miscellaneous (% (w/w))	2	2	0.8020	0.0255						
716.01	Palmitic Acid (16:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.8510							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w))	2	2	0.0268	0.0004						
718.01	Palmitoleic Acid (9c-16:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0325							
722.99	Stearic Acid (18:0), Miscellaneous (% (w/w))	2	2	0.1845	0.0078						
722.01	Stearic Acid (18:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.1830							
724.99	Oleic Acid (9c-18:1), Miscellaneous (% (w/w))	2	2	1.033	0.0025						
724.01	Oleic Acid (9c-18:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	1.205							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w))	3	3	1.875	0.1167	1.875	0.1167	0.0674	6.23%	0.0350	3.64%
726.01	Linoleic Acid (9c,12c-18:2), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	1.500							
726.02	Linoleic Acid (9c,12c-18:2), Direct Methylation by Acid-Alkali Hydrolysis & GC (%)	1	1	1.940							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w))	3	3	0.0927	0.0046	0.0927	0.0046	0.0027	4.99%	0.0013	5.72%
728.01	alpha-Linolenic Acid (9c,12c,15c-18:3), Direct Methylation by Alkali Hydrolysis	1	1	0.1085							
730.01	Arachidic Acid (20:0), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0240							
730.99	Arachidic Acid (20:0), Miscellaneous (% (w/w))	2	1	0.0150							
732.99	Gondoic Acid (11c-20:1), Miscellaneous (% (w/w))	2	2	0.0205	0.0007						
732.01	Gondoic Acid (11c-20:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1	1	0.0290							
736.01	Arachidonic Acid (5c,8c,11c,14c-20:4), Direct Methylation by Alkali Hydrolysis	1		0.0000							
736.99	Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w))	1		0.0100							
738.01	Mead Acid (11c,14c,17c-20:3), Direct Methylation by Alkali Hydrolysis & GC (%)	1		0.0000							
740.01	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Direct Methylation by Al	1		0.0000							
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (% (w/w))	2		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
742.99	Behenic Acid (22:0), Miscellaneous (% (w/w))	2	1	0.0095							
744.01	Erucic Acid (13c-22:1), Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		0.0000							
744.99	Erucic Acid (13c-22:1), Miscellaneous (% (w/w))	1		0.0050							
746.01	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Direct Methylation	1		0.0000							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (% (w/w))	2		0.0000							
748.99	Lignoceric Acid (24:0), Miscellaneous (% (w/w))	1	1	0.0160							
750.01	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Direct Methylation	1		0.0000							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (% (w/w))	2		0.0000							
752.01	Nervonic Acid (24:1) isomers, Direct Methylation by Alkali Hydrolysis & GC (% (w/w))	1		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))	2	2	0.1000	0.0000						
754.02	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Direct Methylation by Acid- <i>F</i>	1	1	0.1060							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w))	2	2	1.910	0.1556						
756.01	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Direct Methylation by Alkali	1	1	1.945							
758.99	Total Saturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.105							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.165							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w))	1	1	1.915							
770.99	Total Fat (equivalent to NLEA), Miscellaneous (% (w/w))	1	1	4.400							
772.99	Total Fatty Acids, Miscellaneous (% (w/w))	2	2	4.116	0.1259						

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**

**Cattle Feed, Medicated**

**Test Material Code # 202028**

**Method Precision Report**

# Methods Reported: 105

# Labs Reporting: 184

Issue Date : 09/30/2020

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 (%)	49	44	9.294	0.2353	0.1967	0.0831	0.2136	2.11%	0.89%	2.29%	2.571
001.99	Loss on Drying, Miscellaneous (%)	20	18	9.250	0.4900	0.3004	0.0894	0.3135	3.22%	0.96%	3.36%	3.505
002.01	Protein, Crude, Auto Kjel-Foss (%)	18	17	14.71	0.3859	0.2474	0.1034	0.2681	1.69%	0.71%	1.83%	2.593
002.05	Protein, Crude, Copper, Boric Acid (%)	30	27	14.57	0.2046	0.2020	0.0876	0.2202	1.39%	0.60%	1.51%	2.512
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	118	107	14.85	0.3140	0.2600	0.1547	0.3025	1.75%	1.04%	2.04%	1.955
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	11	10	4.204	0.3919	0.4031	0.0830	0.4116	9.63%	1.98%	9.83%	4.960
003.06	Fat, Crude, Pet Ether (%)	17	15	4.038	0.4425	0.2316	0.0850	0.2467	5.56%	2.04%	5.93%	2.902
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	14	14	4.369	0.4554	0.4497	0.1012	0.4609	10.29%	2.32%	10.55%	4.556
003.10	Fat, Crude, Randall, Pet Ether (%)	29	27	3.949	0.2564	0.2093	0.0986	0.2313	5.33%	2.51%	5.90%	2.347
003.14	Fat, Crude, Ankom (%)	58	53	3.981	0.3652	0.2648	0.0939	0.2809	6.76%	2.40%	7.17%	2.991
004.00	Fiber, Crude, Asbestos Free (%)	13	12	15.12	1.223	0.9872	0.3050	1.033	6.62%	2.05%	6.93%	3.388
004.06	Fiber, Crude, Fibertec (%)	22	20	15.19	1.315	0.9114	0.1866	0.9303	6.09%	1.25%	6.22%	4.987
004.07	Fiber, Crude, ANKOM (%)	72	69	15.28	1.142	1.122	0.3520	1.176	7.35%	2.30%	7.70%	3.342
005.00	Ash, 2h @ 600°C (%)	87	83	12.25	0.4406	0.4331	0.1174	0.4487	3.54%	0.96%	3.66%	3.821
005.05	Ash, 3h @ 550°C (%)	36	32	12.82	0.3543	0.3256	0.0803	0.3354	2.53%	0.63%	2.61%	4.175
008.02	Fiber, Acid Detergent, Crucible (%)	10	10	21.26	2.080	2.071	0.2835	2.090	9.74%	1.33%	9.83%	7.373
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	44	40	20.47	1.863	1.858	0.2806	1.879	9.11%	1.38%	9.22%	6.697
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	11	10	36.25	1.679	1.648	0.4502	1.709	4.55%	1.24%	4.71%	3.795
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	42	38	35.28	2.077	1.684	0.4478	1.743	4.75%	1.26%	4.92%	3.891
010.99	Moisture, Miscellaneous (%)	16	15	9.383	0.4943	0.4900	0.0923	0.4986	5.22%	0.98%	5.31%	5.404
011.01	Loss on Drying, 135°C 2hr (%)	63	60	10.46	0.6384	0.5919	0.1103	0.6020	5.64%	1.05%	5.74%	5.460
012.00	Starch, Polarimetric (Ewers) (%)	13	11	13.82	0.4050	0.3935	0.1290	0.4141	2.84%	0.93%	2.99%	3.210
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	13.36	1.556	1.528	0.4184	1.584	11.44%	3.13%	11.86%	3.787
013.00	Fat, Acid Pretreat, Acid hydrolysis (%)	17	15	4.710	0.6640	0.6676	0.1404	0.6822	14.08%	2.96%	14.39%	4.859
013.02	Fat, Acid Pretreat, Mojonnier, Bak Ext (%)	17	16	5.305	0.4287	0.4254	0.0750	0.4320	8.02%	1.41%	8.14%	5.757
013.13	Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%)	8	8	5.650	0.8201	0.7880	0.3214	0.8510	13.95%	5.69%	15.06%	2.648
019.00	Calcium, Ox-Mn04 Vol. (%)	13	13	2.156	0.0985	0.0932	0.0448	0.1034	4.32%	2.08%	4.80%	2.307
019.31	Calcium, AAS, Dry ash (%)	17	16	2.215	0.1119	0.1105	0.0256	0.1134	4.99%	1.16%	5.12%	4.429
019.41	Calcium, ICP, Dry ash (%)	26	25	2.177	0.0928	0.0845	0.0512	0.0988	3.89%	2.36%	4.55%	1.928
019.42	Calcium, ICP, Open vessel (%)	19	18	2.244	0.1440	0.1388	0.0643	0.1529	6.20%	2.87%	6.83%	2.379
019.43	Calcium, ICP, Microwave (%)	26	25	2.244	0.2371	0.1525	0.0719	0.1686	6.69%	3.15%	7.40%	2.346
022.31	Copper, AAS, Dry ash (ppm)	9	9	32.71	9.697	9.664	1.135	9.730	29.54%	3.47%	29.74%	8.573
022.41	Copper, ICP, Dry ash (ppm)	20	18	30.00	7.431	6.479	0.7726	6.525	22.26%	2.66%	22.42%	8.445
022.42	Copper, ICP, Open vessel (ppm)	20	20	47.97	3.539	2.847	2.972	4.116	5.94%	6.20%	8.58%	1.385
022.43	Copper, ICP, Microwave (ppm)	23	21	47.36	8.819	4.278	2.224	4.821	8.81%	4.58%	9.93%	2.168
025.31	Iron, AAS, Dry ash (ppm)	12	11	274.3	25.69	25.27	5.070	25.77	9.13%	1.83%	9.31%	5.083

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
025.41	Iron, ICP, Dry ash (ppm)	22	21	259.9	26.13	24.37	7.284	25.44	9.45%	2.83%	9.87%	3.492
025.42	Iron, ICP, Open vessel (ppm)	16	14	242.8	60.88	31.60	6.835	32.33	12.33%	2.67%	12.61%	4.731
025.43	Iron, ICP, Microwave (ppm)	23	19	276.0	51.16	40.91	6.978	41.50	14.66%	2.50%	14.87%	5.947
027.31	Magnesium, AAS, Dry ash (%)	10	8	0.3121	0.0175	0.0084	0.0038	0.0092	2.63%	1.20%	2.90%	2.406
027.41	Magnesium, ICP, Dry ash (%)	17	17	0.3076	0.0128	0.0120	0.0064	0.0136	3.89%	2.09%	4.42%	2.112
027.42	Magnesium, ICP, Open vessel (%)	19	19	0.3096	0.0169	0.0156	0.0091	0.0181	5.03%	2.95%	5.84%	1.976
027.43	Magnesium, ICP, Microwave (%)	21	20	0.3098	0.0361	0.0257	0.0097	0.0275	8.16%	3.09%	8.72%	2.826
028.31	Manganese, AAS, Dry ash (ppm)	10	8	179.2	14.48	4.811	1.482	5.035	2.75%	0.85%	2.88%	3.397
028.41	Manganese, ICP, Dry ash (ppm)	19	19	169.3	11.36	10.57	5.887	12.10	6.24%	3.48%	7.15%	2.056
028.42	Manganese, ICP, Open vessel (ppm)	20	17	191.2	10.32	8.300	2.443	8.652	4.39%	1.29%	4.57%	3.542
028.43	Manganese, ICP, Microwave (ppm)	22	20	189.7	24.63	10.84	5.177	12.02	5.60%	2.67%	6.20%	2.321
031.01	Phosphorus, Photometric (%)	35	32	0.7340	0.0732	0.0365	0.0124	0.0385	4.90%	1.67%	5.18%	3.108
031.41	Phosphorus, ICP, Dry ash (%)	24	22	0.7470	0.0420	0.0264	0.0119	0.0289	3.56%	1.61%	3.91%	2.429
031.42	Phosphorus, ICP, Open vessel (%)	20	18	0.7347	0.0418	0.0410	0.0102	0.0423	5.56%	1.39%	5.73%	4.132
031.43	Phosphorus, ICP, Microwave (%)	24	23	0.7560	0.0507	0.0488	0.0124	0.0504	6.48%	1.65%	6.69%	4.062
032.31	Potassium, AAS, Dry ash (%)	11	11	0.8300	0.0893	0.0888	0.0124	0.0897	10.70%	1.49%	10.81%	7.255
032.41	Potassium, ICP, Dry ash (%)	22	20	0.8099	0.0960	0.0875	0.0142	0.0886	10.67%	1.73%	10.81%	6.232
032.42	Potassium, ICP, Open vessel (%)	19	19	0.9366	0.0540	0.0480	0.0351	0.0595	5.12%	3.75%	6.35%	1.694
032.43	Potassium, ICP, Microwave (%)	25	24	0.9463	0.0994	0.0566	0.0183	0.0595	5.88%	1.90%	6.18%	3.255
033.00	Salt as chloride, Sol Cl (%)	26	24	1.033	0.0526	0.0514	0.0140	0.0533	4.99%	1.36%	5.17%	3.797
033.01	Salt as chloride, Poten Cl (%)	28	26	1.063	0.0348	0.0235	0.0115	0.0262	2.22%	1.09%	2.47%	2.274
033.99	Salt, Miscellaneous (%)	10	10	0.9932	0.1414	0.1406	0.0202	0.1421	14.16%	2.03%	14.31%	7.035
034.53	Selenium, ICP-MS, Microwave (ppm)	11	11	1.184	0.1595	0.1447	0.0948	0.1730	12.23%	8.01%	14.62%	1.824
035.31	Sodium, AAS, Dry ash (%)	12	11	0.3945	0.0409	0.0270	0.0077	0.0281	6.70%	1.91%	6.96%	3.642
035.41	Sodium, ICP, Dry ash (%)	24	23	0.3944	0.0340	0.0331	0.0114	0.0350	8.38%	2.90%	8.87%	3.061
035.42	Sodium, ICP, Open vessel (%)	18	17	0.4289	0.0260	0.0239	0.0116	0.0266	5.56%	2.69%	6.17%	2.296
035.43	Sodium, ICP, Microwave (%)	23	20	0.4254	0.0532	0.0244	0.0102	0.0265	5.65%	2.35%	6.12%	2.600
036.42	Sulfur, ICP, Open vessel (%)	18	18	0.3468	0.0306	0.0298	0.0099	0.0314	8.59%	2.86%	9.06%	3.165
036.43	Sulfur, ICP, Microwave (%)	13	13	0.3620	0.0513	0.0502	0.0154	0.0525	13.86%	4.24%	14.49%	3.416
037.31	Zinc, AAS, Dry ash (ppm)	10	9	179.6	44.37	28.75	2.655	28.87	17.06%	1.58%	17.13%	10.87
037.41	Zinc, ICP, Dry ash (ppm)	20	19	163.7	20.97	20.60	5.549	21.33	12.59%	3.39%	13.04%	3.845
037.42	Zinc, ICP, Open vessel (ppm)	19	19	195.7	15.12	14.57	5.723	15.66	7.45%	2.93%	8.00%	2.736
037.43	Zinc, ICP, Microwave (ppm)	23	21	194.9	26.48	15.03	6.032	16.20	7.54%	3.02%	8.12%	2.686
106.02	Vitamin A, LC (KU / kg)	14	13	2.485	1.125	0.9873	0.5658	1.138	41.84%	23.98%	48.22%	2.011
109.02	Vitamin E, LC (IU / kg)	11	10	19.15	4.762	4.728	0.7983	4.795	24.69%	4.17%	25.04%	6.006
120.00	Alanine, Post-col Ninhydrin Der (%)	19	18	0.8574	0.0205	0.0197	0.0079	0.0212	2.30%	0.92%	2.47%	2.701
120.05	Alanine, Pre-col AQC Der (%)	9	9	0.8141	0.0576	0.0551	0.0235	0.0599	6.77%	2.89%	7.36%	2.550
121.00	Arginine, Post-col Ninhydrin Der (%)	19	17	0.7477	0.0277	0.0270	0.0069	0.0279	3.60%	0.92%	3.72%	4.025
121.05	Arginine, Pre-col AQC Der (%)	9	8	0.6778	0.2583	0.0552	0.0170	0.0577	7.24%	2.23%	7.58%	3.392
122.00	Aspartic, Post-col Ninhydrin Der (%)	19	18	0.9956	0.0357	0.0361	0.0097	0.0373	3.62%	0.97%	3.75%	3.849
122.05	Aspartic, Pre-col AQC Der (%)	9	8	0.9876	0.0874	0.0855	0.0253	0.0892	8.66%	2.56%	9.03%	3.527
124.00	Cysteine/Cystine, PAO Post-col Ninhydrin Der (%)	19	17	0.2788	0.0238	0.0182	0.0067	0.0193	6.42%	2.36%	6.84%	2.899
125.00	Glutamic, Post-col Ninhydrin Der (%)	19	19	2.466	0.1188	0.1174	0.0259	0.1202	4.76%	1.05%	4.87%	4.644
125.05	Glutamic, Pre-col AQC Der (%)	9	8	2.397	0.1976	0.1384	0.0346	0.1426	5.90%	1.47%	6.08%	4.128
126.00	Glycine, Post-col Ninhydrin Der (%)	19	18	0.6422	0.0186	0.0184	0.0058	0.0193	2.87%	0.91%	3.01%	3.316
127.00	Histidine, Post-col Ninhydrin Der (%)	19	18	0.3809	0.0333	0.0253	0.0092	0.0269	6.72%	2.44%	7.15%	2.933

Test Material Code # 202028

Issue Date : 09/30/2020

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
127.05	Histidine, Pre-col AQC Der (%)	9	9	0.3709	0.0390	0.0386	0.0079	0.0394	10.41%	2.12%	10.62%	5.011
128.00	Isoleucine, Post-col Ninhydrin Der (%)	19	19	0.4679	0.0338	0.0334	0.0073	0.0342	7.15%	1.55%	7.31%	4.718
128.05	Isoleucine, Pre-col AQC Der (%)	9	9	0.4489	0.0605	0.0599	0.0114	0.0610	13.35%	2.54%	13.59%	5.349
129.00	Leucine, Post-col Ninhydrin Der (%)	19	18	1.219	0.0556	0.0404	0.0115	0.0420	3.29%	0.93%	3.42%	3.666
129.05	Leucine, Pre-col AQC Der (%)	9	8	1.170	0.0754	0.0676	0.0176	0.0699	5.85%	1.52%	6.04%	3.970
130.00	L-Lysine, Post-col Ninhydrin Der (%)	19	16	0.4925	0.0238	0.0192	0.0078	0.0207	3.94%	1.59%	4.24%	2.674
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	19	17	0.2491	0.0174	0.0111	0.0040	0.0118	4.53%	1.61%	4.81%	2.987
131.05	Methionine, PAO Pre-col AQC Der (%)	9	8	0.2480	0.0601	0.0601	0.0040	0.0602	24.21%	1.61%	24.26%	15.07
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	19	17	0.6041	0.0442	0.0299	0.0097	0.0314	5.01%	1.63%	5.27%	3.230
132.05	Phenylalanine, Pre-col AQC Der (%)	9	8	0.5962	0.0612	0.0636	0.0188	0.0663	10.70%	3.16%	11.16%	3.529
133.00	Proline, Post-col Ninhydrin Der (%)	19	17	1.072	0.1308	0.0471	0.0309	0.0564	4.57%	3.00%	5.47%	1.824
133.05	Proline, Pre-col AQC Der (%)	9	9	1.071	0.0591	0.0557	0.0283	0.0624	5.19%	2.64%	5.83%	2.206
134.00	Serine, Post-col Ninhydrin Der (%)	19	19	0.6430	0.0354	0.0344	0.0117	0.0363	5.35%	1.82%	5.65%	3.105
134.05	Serine, Pre-col AQC Der (%)	9	8	0.6347	0.0294	0.0245	0.0230	0.0336	3.86%	3.62%	5.29%	1.461
135.00	Threonine, Post-col Ninhydrin Der (%)	19	16	0.5066	0.0233	0.0176	0.0041	0.0181	3.45%	0.80%	3.54%	4.408
135.05	Threonine, Pre-col AQC Der (%)	9	8	0.4896	0.0440	0.0238	0.0195	0.0308	4.75%	3.90%	6.14%	1.576
137.00	Tyrosine, Post-col Ninhydrin Der (%)	12	11	0.4133	0.0654	0.0652	0.0066	0.0655	15.77%	1.60%	15.85%	9.897
137.05	Tyrosine, Pre-col AQC Der (%)	9	8	0.5434	0.2910	0.1117	0.0225	0.1140	24.66%	4.97%	25.15%	5.059
138.00	Valine, Post-col Ninhydrin Der (%)	19	17	0.6582	0.0633	0.0407	0.0101	0.0419	6.08%	1.51%	6.27%	4.161
138.05	Valine, Pre-col AQC Der (%)	8	8	0.6250	0.0844	0.0839	0.0129	0.0849	13.42%	2.07%	13.58%	6.571
365.03	Monensin, LC-PCD (ppm)	8	8	36.79	1.584	1.178	1.498	1.906	3.20%	4.07%	5.18%	1.272
365.05	Monensin, LC-MS/MS (ppm)	12	10	36.37	3.253	1.768	1.026	2.044	4.97%	2.89%	5.75%	1.993
400.01	Water Activity, Aqualab chilled mirror (Units)	9	8	0.5989	0.0096	0.0095	0.0019	0.0097	1.59%	0.32%	1.62%	5.128

Notes: Precision Calculations provided for methods with 8 or more labs contributing to calculations.