



AAFCO
Association of American Feed Control Officials



Animal Feed Scheme

Oats

Test Material Code # 202532

Method Summary Report

(Precision Report Follows)

Labs Reporting: 150

Methods Reported: 344

Issue Date : 01/31/2026

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 (Rob R-bar)	Thompson Horwitz %RSD
001.07	Loss on Drying, 104°C 3 hr, in malt (%)	34	34	9.643	1.625	9.999	0.4260	0.0913	4.26%	0.1826	2.83%
001.99	Loss on Drying, Miscellaneous (%)	15	14	9.716	0.8923	9.825	0.7032	0.2349	7.16%	0.1116	2.84%
001.00	Loss on Drying, Vac 95°C 5 hr (%)	4	3	9.289	0.8024	9.289	0.8024	0.4633	8.64%	0.0274	2.86%
001.03	Loss on Drying, Low temp. methods (%)	3	3	10.36	1.399	10.36	1.399	0.8079	13.50%	0.4133	2.81%
001.05	Loss on Drying, LECO (%)	1	1	10.08							
001.08	Loss on Drying, 102°C 16 hr, in meat (%)	1	1	10.14							
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	102	100	12.77	0.5186	12.75	0.5106	0.0638	4.01%	0.3590	2.73%
002.01	Protein, Crude, Auto Kjell-Foss (%)	15	15	12.28	0.3278	12.33	0.1968	0.0635	1.60%	0.1735	2.74%
002.05	Protein, Crude, Copper, Boric Acid (%)	14	14	12.59	0.3610	12.54	0.2616	0.0874	2.09%	0.1779	2.73%
002.11	Protein, Crude, NIR (%)	6	6	12.44	2.009	12.63	1.828	0.9329	14.48%	0.3175	2.73%
002.00	Protein, Crude, Crude (%)	2	2	12.08	0.0318						
002.02	Protein, Crude, Semiauto Autoanalyzer (%)	1	1	12.66							
002.04	Protein, Crude, Copper Catalyst (%)	1	1	12.10							
002.08	Protein, Crude, Cu/Ti (%)	1	1	12.13							
003.14	Fat, Crude, Ankom (%)	53	53	3.532	0.4456	3.545	0.3377	0.0580	9.53%	0.1331	3.31%
003.10	Fat, Crude, Randall, Pet Ether (%)	21	21	3.724	0.3071	3.708	0.2978	0.0812	8.03%	0.1336	3.28%
003.06	Fat, Crude, Pet Ether (%)	13	13	3.816	0.5323	3.889	0.4286	0.1486	11.02%	0.0971	3.26%
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	9	9	3.837	0.5216	3.837	0.5915	0.2465	15.42%	0.1365	3.27%
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	8	8	3.904	0.2377	3.890	0.2347	0.1037	6.03%	0.1297	3.26%
003.11	Fat, Crude, NIR (%)	5	5	4.993	1.952	4.993	1.952	0.8730	39.10%	0.2740	3.14%
003.12	Fat, Crude, Hexane Ext (%)	5	5	4.079	0.4941	4.079	0.4941	0.2210	12.11%	0.2660	3.24%
003.99	Fat, Crude, Miscellaneous (%)	4	3	3.127	1.582	3.127	1.582				3.37%
003.01	Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%)	2	2	3.828	0.5975						
003.13	Fat, Crude, Randall, Hexane Ext. (%)	2	2	4.028	0.0601						
004.07	Fiber, Crude, ANKOM (%)	70	68	10.84	0.9498	10.84	0.5481	0.0831	5.06%	0.3044	2.79%
004.06	Fiber, Crude, Fibertec (%)	17	16	11.02	0.8172	10.92	0.5993	0.1873	5.49%	0.2176	2.79%
004.00	Fiber, Crude, Asbestos Free (%)	7	7	10.01	1.620	10.37	0.8814	0.4164	8.50%	0.3786	2.81%
004.11	Fiber, Crude, NIR (%)	5	5	7.722	3.120	7.722	3.120	1.395	40.41%	0.5440	2.94%
004.03	Fiber, Crude, Fritted Glass (%)	2	2	11.86	0.7354						

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004.99	Fiber, Crude, Miscellaneous (%)	2	2	9.467	1.376						
005.00	Ash, 2h @ 600°C (%)	85	82	3.001	0.1529	2.991	0.0992	0.0137	3.31%	0.0673	3.39%
005.05	Ash, 3h @ 550°C (%)	20	19	3.009	0.0819	3.005	0.0710	0.0204	2.36%	0.0421	3.39%
005.99	Ash, Miscellaneous (%)	5	5	2.995	0.0658	2.995	0.0658	0.0294	2.20%	0.0767	3.39%
005.11	Ash, NIR (%)	4	4	4.003	1.043	4.003	1.043	0.5215	26.06%	0.1750	3.25%
005.02	Ash, LECO (%)	1	1	3.080							
005.03	Ash, Microwave furnace (%)	1	1	3.050							
006.99	Total Sugars, Miscellaneous (%)	4	4	1.730	0.4786	1.730	0.4786	0.2393	27.66%	0.2650	3.68%
006.00	Total Sugars, As sucrose (%)	3	3	1.104	0.3084	1.104	0.3084	0.1780	27.94%	0.1657	3.94%
006.03	Total Sugars, Invert w/o Invrns (%)	2	2	1.520	0.9617						
006.01	Total Sugars, Mod. Fehling Soln (%)	1	1	1.370							
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	43	42	14.04	1.499	14.13	0.9784	0.1887	6.93%	0.3741	2.66%
008.02	Fiber, Acid Detergent, Crucible (%)	8	7	13.98	2.518	14.50	1.477	0.6979	10.19%	0.3450	2.63%
008.99	Fiber, Acid Detergent, Miscellaneous (%)	3	3	12.93	0.3831	12.93	0.3831	0.2212	2.96%	0.6623	2.72%
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	40	39	28.31	1.919	28.36	1.618	0.3239	5.71%	0.4829	1.88%
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	7	7	27.43	3.660	27.56	3.838	1.813	13.93%	0.8532	1.90%
009.99	Fiber, Neutral Detergent, Miscellaneous (%)	1	1	30.00							
010.99	Moisture, Miscellaneous (%)	15	14	9.993	0.9730	10.17	0.5475	0.1829	5.38%	0.0841	2.82%
010.11	Moisture, NIR (%)	5	5	9.904	0.9952	9.904	0.9952	0.4451	10.05%	0.2280	2.83%
010.03	Moisture, Karl-Fischer (%)	2	2	8.216	2.671						
011.01	Loss on Drying, HT, 135°C 2hr (%)	59	57	10.44	0.5797	10.51	0.4369	0.0723	4.16%	0.1103	2.81%
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	5	5	10.51	0.3252	10.51	0.3252	0.1455	3.10%	0.1200	2.81%
011.02	Loss on Drying, HT, 130°C for 2 hours (%)	2	2	10.32	0.1626						
012.00	Starch, Polarimetric (Ewers) (%)	13	13	38.79	1.223	38.78	1.259	0.4366	3.25%	0.5878	1.61%
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	36.77	2.290	36.93	2.246	0.8878	6.08%	1.201	1.65%
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	8	8	39.31	0.8974	39.37	0.8906	0.3936	2.26%	1.096	1.59%
012.03	Starch, Enzymatic-Colorimetric Method, Miscellaneous (%)	2	2	37.56	0.4310						
012.11	Starch, NIR (%)	1	1	37.40							
012.20	Starch, Dietary, Enzymatic-Colorimetric (%)	1	1	38.73							
012.99	Starch, Miscellaneous (%)	1	1	40.04							
013.00	Fat, Pretreat, Acid hydrolysis (%)	16	15	4.828	0.6307	4.908	0.4310	0.1391	8.78%	0.1744	3.15%
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	15	14	4.743	0.5402	4.664	0.3560	0.1189	7.63%	0.1803	3.17%
013.02	Fat, Pretreat, Mojonniere, Bak Ext, Acid hydrolysis (%)	12	12	5.353	0.5258	5.268	0.3748	0.1352	7.11%	0.3466	3.11%
013.10	Fat, Pretreat, Soxtec-Acid Hydrolysis (%)	4	4	4.341	0.6229	4.341	0.6229	0.3115	14.35%	0.1100	3.21%
013.08	Fat, Pretreat, Roese-Gottlieb Modified, Alkaline Hydrolysis (%)	1	1	3.610							
013.99	Fat, Pretreat, Miscellaneous (%)	1	1	3.985							
014.01	Fiber, Total Dietary, Enz-Grav (%)	1	1	25.70							
014.02	Fiber, Total Dietary, ANKOM Enz-Grav (%)	1	1	28.45							
015.43	Aluminum, ICP, Microwave (ppm)	6	5	14.06	4.578	14.06	4.578	2.559	32.57%	0.7923	10.75%
015.41	Aluminum, ICP, Dry ash (ppm)	3	3	13.90	8.162	13.90	8.162	4.713	58.72%	2.414	10.76%

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015.42	Aluminum, ICP, Open vessel (ppm)	2	2	74.63	102.7						
015.53	Aluminum, ICP-MS, Microwave (ppm)	2	2	13.60	0.1553						
017.42	Boron, ICP, Open vessel (ppm)	4	4	2.320	0.9307	2.320	0.9307	0.4654	40.12%	0.8230	14.09%
017.43	Boron, ICP, Microwave (ppm)	5	4	1.422	0.2931	1.422	0.2931	0.1465	20.61%	0.1282	15.17%
017.41	Boron, ICP, Dry ash (ppm)	4	3	1.381	0.0517	1.381	0.0517	0.0299	3.74%	0.1638	15.24%
017.53	Boron, ICP-MS, Microwave (ppm)	1	1	1.179							
017.99	Boron, Miscellaneous (ppm)	1	1	2.225							
019.43	Calcium, ICP, Microwave (%)	30	29	0.0686	0.0128	0.0663	0.0063	0.0015	9.46%	0.0036	6.02%
019.42	Calcium, ICP, Open vessel (%)	19	18	0.0744	0.0144	0.0753	0.0140	0.0041	18.65%	0.0058	5.90%
019.41	Calcium, ICP, Dry ash (%)	17	17	0.0704	0.0136	0.0684	0.0073	0.0022	10.66%	0.0069	5.99%
019.08	Calcium, EDTA (%)	8	8	0.1969	0.0888	0.1969	0.1007	0.0445	51.17%	0.0420	5.11%
019.31	Calcium, AAS, Dry ash (%)	8	7	0.0697	0.0297	0.0727	0.0264	0.0125	36.27%	0.0083	5.93%
019.53	Calcium, ICP-MS, Microwave (%)	5	5	0.0678	0.0058	0.0678	0.0058	0.0026	8.53%	0.0041	6.00%
019.00	Calcium, Ox-Mn04 Vol. (%)	4	4	0.2576	0.1590	0.2576	0.1590	0.0795	61.72%	0.0463	4.91%
019.99	Calcium, Miscellaneous (%)	5	4	0.0550	0.0129	0.0550	0.0129				6.19%
019.44	Calcium, ICP, Dry ash (%)	2	2	0.0623	0.0021						
019.02	Calcium, Hach Method (%)	1	1	1.210							
019.09	Calcium, Ion-selective electrode (%)	1	1	0.0850							
019.32	Calcium, AAS, Open vessel (%)	1	1	0.0750							
019.52	Calcium, ICP-MS, Open vessel (%)	1	1	0.0960							
021.43	Cobalt, ICP, Microwave (ppm)	8	5	0.4542	0.1070	0.4542	0.1070	0.0598	23.55%	0.0226	18.01%
021.42	Cobalt, ICP, Open vessel (ppm)	3	3	0.2772	0.0398	0.2772	0.0398	0.0230	14.36%	0.1057	19.40%
021.52	Cobalt, ICP-MS, Open vessel (ppm)	2	2	0.2798	0.2330						
021.41	Cobalt, ICP, Dry ash (ppm)	2	1	0.5564							
021.53	Cobalt, ICP-MS, Microwave (ppm)	1	1	0.5793							
022.43	Copper, ICP, Microwave (ppm)	24	21	4.363	1.208	4.311	0.9060	0.2471	21.02%	0.3044	12.84%
022.42	Copper, ICP, Open vessel (ppm)	17	16	4.670	1.331	4.819	1.031	0.3222	21.40%	0.3744	12.63%
022.41	Copper, ICP, Dry ash (ppm)	12	11	5.355	5.020	4.147	0.9062	0.3416	21.85%	0.2755	12.91%
022.99	Copper, Miscellaneous (ppm)	4	4	5.018	3.666	5.018	3.666	1.833	73.06%	0.8450	12.55%
022.31	Copper, AAS, Dry ash (ppm)	4	3	8.962	4.795	8.962	4.795	2.768	53.50%	0.2033	11.50%
022.44	Copper, ICP, Dry ash (ppm)	3	3	4.637	0.3786	4.637	0.3786	0.2186	8.16%	0.1453	12.70%
022.53	Copper, ICP-MS, Microwave (ppm)	3	3	4.390	0.3915	4.390	0.3915	0.2260	8.92%	0.6971	12.80%
022.52	Copper, ICP-MS, Open vessel (ppm)	1	1	4.545							
022.32	Copper, AAS, Open vessel (ppm)	1		6.000							
024.52	Iodine, ICP-MS, Open vessel (ppm)	1	1	0.1365							
025.43	Iron, ICP, Microwave (ppm)	27	25	63.49	18.70	59.56	11.39	2.848	19.13%	2.764	8.65%
025.42	Iron, ICP, Open vessel (ppm)	17	17	59.40	16.76	56.87	10.56	3.202	18.57%	3.291	8.71%
025.41	Iron, ICP, Dry ash (ppm)	16	15	59.90	16.13	58.23	12.58	4.062	21.61%	1.553	8.68%
025.31	Iron, AAS, Dry ash (ppm)	4	4	57.41	18.89	57.41	18.89	9.444	32.90%	4.933	8.70%
025.53	Iron, ICP-MS, Microwave (ppm)	4	4	66.55	18.60	66.55	18.60	9.300	27.95%	8.229	8.50%

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025.99	Iron, Miscellaneous (ppm)	4	4	66.95	10.24	66.95	10.24	5.122	15.30%	2.890	8.50%
025.33	Iron, AAS, Microwave (ppm)	1	1	97.51							
027.43	Magnesium, ICP, Microwave (%)	30	29	0.1312	0.0112	0.1310	0.0093	0.0021	7.06%	0.0078	5.43%
027.42	Magnesium, ICP, Open vessel (%)	20	20	0.1378	0.0105	0.1375	0.0111	0.0031	8.10%	0.0093	5.39%
027.41	Magnesium, ICP, Dry ash (%)	14	14	0.1290	0.0102	0.1282	0.0099	0.0033	7.71%	0.0048	5.45%
027.31	Magnesium, AAS, Dry ash (%)	5	4	0.1314	0.0068	0.1314	0.0068	0.0034	5.21%	0.0041	5.43%
027.53	Magnesium, ICP-MS, Microwave (%)	5	4	0.1308	0.0042	0.1308	0.0042	0.0021	3.19%	0.0045	5.43%
027.99	Magnesium, Miscellaneous (%)	4	3	0.1267	0.0029	0.1267	0.0029	0.0017	2.28%	0.0100	5.46%
027.44	Magnesium, ICP, Dry ash (%)	2	2	0.1235	0.0120						
027.32	Magnesium, AAS, Open vessel (%)	1	1	0.1450							
027.33	Magnesium, AAS, Microwave (%)	1	1	0.1300							
027.52	Magnesium, ICP-MS, Open vessel (%)	1	1	0.1394							
028.43	Manganese, ICP, Microwave (ppm)	18	18	50.00	3.575	49.92	3.863	1.138	7.74%	1.578	8.88%
028.42	Manganese, ICP, Open vessel (ppm)	17	17	49.89	3.401	49.54	2.900	0.8793	5.85%	1.997	8.89%
028.41	Manganese, ICP, Dry ash (ppm)	8	8	48.75	3.647	48.75	4.135	1.828	8.48%	1.487	8.91%
028.31	Manganese, AAS, Dry ash (ppm)	3	3	50.02	5.832	50.02	5.832	3.367	11.66%	1.860	8.88%
028.44	Manganese, ICP, Dry ash (ppm)	3	3	43.24	5.247	43.24	5.247	3.029	12.14%	1.410	9.07%
028.53	Manganese, ICP-MS, Microwave (ppm)	3	3	53.31	8.772	53.31	8.772	6.203	16.45%	6.514	8.79%
028.99	Manganese, Miscellaneous (ppm)	4	3	49.90	0.5292	49.90	0.5292	0.3055	1.06%	2.067	8.88%
028.33	Manganese, AAS, Microwave (ppm)	1	1	48.99							
028.52	Manganese, ICP-MS, Open vessel (ppm)	1	1	49.47							
030.01	Nitrate, Ion-selective electrode (%)	1		0.0005							
031.43	Phosphorus, ICP, Microwave (%)	32	31	0.3459	0.0247	0.3468	0.0250	0.0056	7.22%	0.0205	4.69%
031.01	Phosphorus, Photometric (%)	21	20	0.3299	0.0288	0.3331	0.0248	0.0069	7.45%	0.0185	4.72%
031.42	Phosphorus, ICP, Open vessel (%)	20	20	0.3358	0.0305	0.3384	0.0285	0.0080	8.42%	0.0163	4.71%
031.41	Phosphorus, ICP, Dry ash (%)	16	16	0.3375	0.0326	0.3354	0.0316	0.0099	9.41%	0.0122	4.71%
031.99	Phosphorus, Miscellaneous (%)	6	6	0.3239	0.0262	0.3229	0.0273	0.0139	8.45%	0.0201	4.74%
031.53	Phosphorus, ICP-MS, Microwave (%)	5	4	0.3396	0.0141	0.3396	0.0141	0.0081	4.15%	0.0075	4.71%
031.44	Phosphorus, ICP, Dry ash (%)	3	3	0.3276	0.0258	0.3276	0.0258	0.0149	7.87%	0.0118	4.73%
031.03	Phosphorus, Autoanalyzer (%)	2	2	0.3364	0.0020						
031.00	Phosphorus, Vol (%)	1	1	0.3400							
031.52	Phosphorus, ICP-MS, Open vessel (%)	1	1	0.3312							
032.43	Potassium, ICP, Microwave (%)	32	31	0.4066	0.0318	0.4065	0.0358	0.0080	8.80%	0.0107	4.58%
032.42	Potassium, ICP, Open vessel (%)	19	19	0.4104	0.0412	0.4098	0.0392	0.0112	9.57%	0.0285	4.57%
032.41	Potassium, ICP, Dry ash (%)	15	15	0.4009	0.0339	0.3968	0.0281	0.0091	7.07%	0.0152	4.60%
032.53	Potassium, ICP-MS, Microwave (%)	5	4	0.3999	0.0110	0.3999	0.0110	0.0055	2.74%	0.0098	4.59%
032.99	Potassium, Miscellaneous (%)	4	4	0.3859	0.0110	0.3859	0.0110	0.0055	2.84%	0.0093	4.62%
032.31	Potassium, AAS, Dry ash (%)	3	3	0.4038	0.0418	0.4038	0.0418	0.0241	10.34%	0.0083	4.58%
032.44	Potassium, ICP, Dry ash (%)	2	2	0.3990	0.0269						
032.52	Potassium, ICP-MS, Open vessel (%)	2	2	0.3996	0.0086						

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032.02	Potassium, Flame Emission (%)	1	1	0.4350							
032.32	Potassium, AAS, Open vessel (%)	1	1	0.5050							
032.33	Potassium, AAS, Microwave (%)	1	1	0.4000							
033.01	Salt as chloride, Poten Cl (%)	19	18	0.1126	0.0314	0.1068	0.0198	0.0058	18.51%	0.0100	5.60%
033.99	Salt, Miscellaneous (%)	11	10	0.0727	0.0704	0.0656	0.0621	0.0245	94.59%	0.0143	6.03%
033.00	Salt as chloride, Sol Cl (%)	6	6	0.1821	0.0929	0.1821	0.1053	0.0537	57.84%	0.0276	5.17%
033.03	Salt as chloride, Quantab (%)	2	2	0.1500	0.0707						
033.05	Salt as chloride, Ion Sel Electrode (%)	2	2	0.1125	0.0530						
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	8	8	0.4074	0.0754	0.3965	0.0578	0.0256	14.58%	0.0356	18.39%
034.41	Selenium, Total (Se), ICP, Dry ash (ppm)	3	3	0.4887	0.2915	0.4887	0.2915	0.1683	59.64%	0.0366	17.82%
034.04	Selenium, Total (Se), AA, Hydride (ppm)	2	2	0.3050	0.0283						
034.43	Selenium, Total (Se), ICP, Microwave (ppm)	4	2	0.3875	0.0318	0.3875	0.0318				18.45%
034.52	Selenium, Total (Se), ICP-MS, Open vessel (ppm)	2	2	0.3347	0.0349						
034.01	Selenium, Total (Se), Fluor (ppm)	1	1	0.3905							
034.42	Selenium, Total (Se), ICP, Open vessel (ppm)	1	1	1.515							
034.99	Selenium, Total (Se), Miscellaneous (ppm)	1	1	0.4375							
035.43	Sodium, ICP, Microwave (%)	22	19	0.0194	0.0299	0.0105	0.0057	0.0016	53.89%	0.0016	7.94%
035.41	Sodium, ICP, Dry ash (%)	18	16	0.0126	0.0067	0.0116	0.0049	0.0015	42.17%	0.0012	7.82%
035.42	Sodium, ICP, Open vessel (%)	17	16	0.0140	0.0078	0.0129	0.0052	0.0016	40.52%	0.0027	7.70%
035.31	Sodium, AAS, Dry ash (%)	4	4	0.0126	0.0030	0.0126	0.0030	0.0015	23.65%	0.0013	7.73%
035.53	Sodium, ICP-MS, Microwave (%)	5	4	0.0081	0.0014	0.0081	0.0014	0.0007	17.31%	0.0005	8.26%
035.99	Sodium, Miscellaneous (%)	3	3	0.0150	0.0050	0.0150	0.0050	0.0035	33.33%		7.53%
035.05	Sodium, Flame Emission (%)	2	2	0.0378	0.0385						
035.32	Sodium, AAS, Open vessel (%)	1	1	0.0250							
035.52	Sodium, ICP-MS, Open vessel (%)	1	1	0.0125							
036.43	Sulfur, ICP, Microwave (%)	22	20	0.1685	0.0118	0.1687	0.0130	0.0036	7.72%	0.0078	5.23%
036.42	Sulfur, ICP, Open vessel (%)	18	18	0.1632	0.0138	0.1643	0.0124	0.0037	7.57%	0.0067	5.25%
036.04	Sulfur, LECO (%)	5	5	0.1918	0.0357	0.1918	0.0357	0.0160	18.62%	0.0135	5.13%
036.53	Sulfur, ICP-MS, Microwave (%)	2	2	0.1653	0.0046						
036.99	Sulfur, Miscellaneous (%)	2	2	0.1550	0.0212						
036.52	Sulfur, ICP-MS, Open vessel (%)	1	1	0.1611							
037.43	Zinc, ICP, Microwave (ppm)	28	26	30.87	11.35	28.92	3.371	0.8263	11.65%	1.316	9.64%
037.42	Zinc, ICP, Open vessel (ppm)	18	17	29.51	4.752	29.05	4.086	1.239	14.07%	0.8659	9.63%
037.41	Zinc, ICP, Dry ash (ppm)	14	14	29.64	2.461	29.47	2.368	0.7911	8.04%	0.9837	9.61%
037.99	Zinc, Miscellaneous (ppm)	4	4	40.79	24.10	40.79	24.10	12.05	59.07%	3.273	9.15%
037.31	Zinc, AAS, Dry ash (ppm)	4	3	30.21	1.835	30.21	1.835	1.060	6.07%	0.6200	9.58%
037.44	Zinc, ICP, Dry ash (ppm)	3	3	26.70	2.436	26.70	2.436	1.723	9.12%	0.3600	9.76%
037.53	Zinc, ICP-MS, Microwave (ppm)	4	3	29.21	0.9214	29.21	0.9214	0.5320	3.15%	0.7767	9.63%
037.32	Zinc, AAS, Open vessel (ppm)	1	1	31.95							
037.33	Zinc, AAS, Microwave (ppm)	1	1	28.61							

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 (Rob R-bar)	Thompson Horwitz %RSD
037.52	Zinc, ICP-MS, Open vessel (ppm)	1	1	33.84							
038.43	Molybdenum, ICP, Microwave (ppm)	9	8	0.9913	0.2153	0.9822	0.2103	0.0929	21.41%	0.0736	16.04%
038.42	Molybdenum, ICP, Open vessel (ppm)	6	6	1.023	0.2945	1.023	0.3339	0.1704	32.64%	0.1492	15.94%
038.53	Molybdenum, ICP-MS, Microwave (ppm)	5	4	1.019	0.0520	1.019	0.0520	0.0300	5.10%	0.0417	15.95%
038.41	Molybdenum, ICP, Dry ash (ppm)	2	2	1.222	0.0315						
038.52	Molybdenum, ICP-MS, Open vessel (ppm)	2	2	0.9095	0.0134						
038.99	Molybdenum, Miscellaneous (ppm)	1	1	1.300							
040.43	Barium, ICP, Microwave (ppm)	2	2	2.321	0.1616						
040.53	Barium, ICP-MS, Microwave (ppm)	1	1	2.527							
041.53	Vanadium, ICP-MS, Microwave (ppm)	1	1	0.0763							
042.00	Chloride, Titrimetric (%)	7	6	0.0746	0.0323	0.0651	0.0115	0.0059	17.70%	0.0085	6.03%
042.99	Chloride, Miscellaneous (%)	1	1	0.0900							
101.99	Choline Chloride, Miscellaneous (ppm)	1	1	1,550							
102.01	Niacin, Microbiological (ppm)	1	1	11.15							
103.01	Pantothenic Acid, Microbiological (ppm)	1	1	4.410							
104.00	Riboflavin, Fluorometric (ppm)	1	1	1.005							
104.03	Riboflavin, LC (ppm)	1	1	0.5800							
105.00	Thiamine, LC (ppm)	1	1	4.960							
105.01	Thiamine, Fluorometer (ppm)	1	1	6.350							
106.02	Vitamin A, LC (KU / kg)	8	1								
106.03	Vitamin A, Color (KU / kg)	1	1	0.1200							
106.00	Vitamin A, UV (KU / kg)	1		0.3000							
106.01	Vitamin A, UV (KU / kg)	1		0.8000							
106.99	Vitamin A, Miscellaneous (KU / kg)	1		0.0000							
107.00	Vitamin B12, Microbiological (ppb)	1		4.400							
108.02	Vitamin D3, LC (KU / kg)	6	2	1.094	1.306	1.094	1.306	1.154		0.1980	
108.99	Vitamin D3, Miscellaneous (KU / kg)	1		0.0000							
109.02	Vitamin E, LC (IU / kg)	8	7	5.612	0.7374	5.612	0.8362	0.3950	14.90%	0.5388	
109.03	Vitamin E, UV (IU / kg)	1	1	5.850							
109.99	Vitamin E, Miscellaneous (IU / kg)	1		0.0000							
111.00	Vitamin C, Phosphorylated, LC (ppm)	1		4.400							
112.01	Pyridoxine, LC (µg / g)	1	1	0.9600							
113.01	Folic Acid, Micro (ppm)	1	1	0.6335							
114.99	Biotin, Miscellaneous (ppm)	1	1	0.1520							
115.00	Non Protein N (NPN), Urea + Am, Urease method (%)	2	2	0.9415	1.186						
115.99	Non Protein N (NPN), Miscellaneous (%)	1	1	0.4660							
120.00	Alanine, Post-col Ninhydrin Der (%)	13	12	0.5824	0.0194	0.5821	0.0214	0.0077	3.67%	0.0085	4.34%
120.05	Alanine, Pre-col AQC Der (%)	6	6	0.5983	0.0379	0.5968	0.0393	0.0201	6.59%	0.0115	4.32%
120.02	Alanine, Post-col OPA Der (%)	1	1	0.5710							
121.00	Arginine, Post-col Ninhydrin Der (%)	13	13	0.8165	0.0187	0.8162	0.0205	0.0071	2.51%	0.0133	4.12%

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121.05	Arginine, Pre-col AQC Der (%)	6	6	0.7904	0.0419	0.7904	0.0475	0.0243	6.01%	0.0448	4.14%
121.02	Arginine, Post-col OPA Der (%)	1	1	0.7100							
122.00	Aspartic, Post-col Ninhydrin Der (%)	13	12	1.005	0.0237	1.004	0.0216	0.0078	2.15%	0.0160	4.00%
122.05	Aspartic, Pre-col AQC Der (%)	6	6	1.045	0.0882	1.045	0.1000	0.0510	9.57%	0.0293	3.97%
122.02	Aspartic, Post-col OPA Der (%)	1	1	0.9775							
124.00	Cysteine/Cystine, PAO Post-col Ninhydry (%)	12	12	0.3515	0.0243	0.3498	0.0235	0.0085	6.73%	0.0082	4.68%
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	6	6	0.3221	0.0386	0.3221	0.0438	0.0224	13.60%	0.0147	4.74%
124.02	Cysteine/Cystine, PAO Post-col OPA Der (%)	2	2	0.3475	0.0177						
125.00	Glutamic, Post-col Ninhydrin Der (%)	13	13	2.576	0.1169	2.572	0.1040	0.0361	4.04%	0.0318	3.47%
125.05	Glutamic, Pre-col AQC Der (%)	6	6	2.587	0.1462	2.587	0.1658	0.0846	6.41%	0.0640	3.47%
125.02	Glutamic, Post-col OPA Der (%)	1	1	2.480							
126.00	Glycine, Post-col Ninhydrin Der (%)	13	12	0.6006	0.0146	0.5998	0.0118	0.0043	1.97%	0.0079	4.32%
126.05	Glycine, Pre-col AQC Der (%)	6	6	0.5802	0.0250	0.5792	0.0261	0.0133	4.50%	0.0210	4.34%
126.02	Glycine, Post-col OPA Der (%)	1	1	0.5850							
127.00	Histidine, Post-col Ninhydrin Der (%)	13	13	0.2737	0.0120	0.2717	0.0082	0.0028	3.02%	0.0086	4.87%
127.05	Histidine, Pre-col AQC Der (%)	6	6	0.2618	0.0150	0.2618	0.0171	0.0087	6.51%	0.0125	4.89%
127.02	Histidine, Post-col OPA Der (%)	1	1	0.2595							
128.00	Isoleucine, Post-col Ninhydrin Der (%)	13	13	0.4719	0.0192	0.4677	0.0111	0.0039	2.38%	0.0165	4.48%
128.05	Isoleucine, Pre-col AQC Der (%)	6	6	0.4646	0.0433	0.4685	0.0397	0.0203	8.48%	0.0153	4.48%
128.02	Isoleucine, Post-col OPA Der (%)	1	1	0.4725							
129.00	Leucine, Post-col Ninhydrin Der (%)	13	13	0.9183	0.0334	0.9139	0.0237	0.0082	2.60%	0.0153	4.05%
129.05	Leucine, Pre-col AQC Der (%)	6	6	0.8977	0.0341	0.8977	0.0387	0.0197	4.31%	0.0265	4.07%
129.02	Leucine, Post-col OPA Der (%)	1	1	0.8800							
130.00	L-Lysine, Post-col Ninhydrin Der (%)	13	13	0.5110	0.0174	0.5111	0.0194	0.0067	3.79%	0.0096	4.42%
130.05	L-Lysine, Pre-col AQC Der (%)	6	6	0.5176	0.0349	0.5176	0.0396	0.0202	7.64%	0.0193	4.42%
130.02	L-Lysine, Post-col OPA Der (%)	1	1	0.5090							
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	12	12	0.2182	0.0149	0.2166	0.0126	0.0045	5.82%	0.0084	5.04%
131.05	Methionine, PAO Pre-col AQC Der (%)	6	6	0.2189	0.0153	0.2189	0.0173	0.0088	7.92%	0.0070	5.03%
131.02	Methionine, PAO Post-col OPA Der (%)	2	2	0.2163	0.0053						
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	13	12	0.6470	0.0321	0.6437	0.0277	0.0100	4.31%	0.0120	4.27%
132.05	Phenylalanine, Pre-col AQC Der (%)	6	6	0.6128	0.0155	0.6128	0.0175	0.0089	2.86%	0.0255	4.31%
132.02	Phenylalanine, Post-col OPA Der (%)	1	1	0.6095							
133.00	Proline, Post-col Ninhydrin Der (%)	13	12	0.6714	0.0456	0.6718	0.0464	0.0167	6.91%	0.0142	4.25%
133.05	Proline, Pre-col AQC Der (%)	6	6	0.6698	0.0194	0.6698	0.0220	0.0112	3.28%	0.0123	4.25%
134.00	Serine, Post-col Ninhydrin Der (%)	13	13	0.5782	0.0307	0.5807	0.0281	0.0097	4.84%	0.0107	4.34%
134.05	Serine, Pre-col AQC Der (%)	6	6	0.5923	0.0168	0.5923	0.0191	0.0097	3.22%	0.0168	4.33%
134.02	Serine, Post-col OPA Der (%)	1	1	0.4795							
135.00	Threonine, Post-col Ninhydrin Der (%)	13	13	0.4197	0.0139	0.4190	0.0131	0.0045	3.13%	0.0109	4.56%
135.05	Threonine, Pre-col AQC Der (%)	6	6	0.4264	0.0253	0.4264	0.0287	0.0147	6.74%	0.0158	4.55%
135.02	Threonine, Post-col OPA Der (%)	1	1	0.3795							

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136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	5	5	0.1804	0.0254	0.1804	0.0254	0.0113	14.07%	0.0047	5.18%
136.01	Tryptophan, Alka-Hydrol Rev Phase LC UV (%)	3	3	0.1697	0.0267	0.1697	0.0267	0.0188	15.71%		5.22%
136.05	Tryptophan, Pre-col AQC Der (%)	3	3	0.1552	0.0236	0.1552	0.0236	0.0136	15.20%	0.0110	5.29%
136.99	Tryptophan, Miscellaneous (%)	2	2	0.1290	0.0481						
136.00	Tryptophan, Alka-Hydrol Post-col Ninhyd (%)	1	1	0.1570							
136.02	Tryptophan, Alka-Hydrol Post-col OPA De (%)	1	1	0.1486							
137.00	Tyrosine, Post-col Ninhydrin Der (%)	12	12	0.3589	0.0612	0.3678	0.0441	0.0159	11.99%	0.0192	4.65%
137.05	Tyrosine, Pre-col AQC Der (%)	6	6	0.3858	0.0277	0.3858	0.0314	0.0160	8.15%	0.0173	4.62%
137.02	Tyrosine, Post-col OPA Der (%)	1	1	0.2525							
138.00	Valine, Post-col Ninhydrin Der (%)	13	12	0.6437	0.0202	0.6430	0.0213	0.0077	3.31%	0.0094	4.27%
138.05	Valine, Pre-col AQC Der (%)	6	6	0.6171	0.0457	0.6205	0.0437	0.0223	7.04%	0.0163	4.30%
138.02	Valine, Post-col OPA Der (%)	1	1	0.6665							
139.00	Taurine, Post-col Ninhydrin Der (%)	2	2	0.1775	0.1025						
139.05	Taurine, Pre-col AQC Der (%)	2	1	0.0640							
139.02	Taurine, Post-col OPA Der (%)	2		0.0100							
160.10	Fructose, HPAEC PAD (%)	1	1	0.1400							
160.99	Fructose, Miscellaneous (%)	1		0.1500							
162.10	Glucose, HPAEC PAD (%)	1	1	0.3050							
162.99	Glucose, Miscellaneous (%)	1		0.1500							
163.99	Lactose, Miscellaneous (%)	1		0.1500							
164.99	Maltose, Miscellaneous (%)	1		0.1500							
165.10	Sucrose, HPAEC PAD (%)	1	1	0.7200							
165.99	Sucrose, Miscellaneous (%)	1	1	0.8400							
166.10	Raffinose, HPAEC PAD (%)	1	1	0.0700							
166.99	Raffinose, Miscellaneous (%)	1	1	0.0700							
167.10	Stachyose, HPAEC PAD (%)	1	1	0.1450							
167.99	Stachyose, Miscellaneous (%)	1	1	0.0800							
400.01	Water Activity, Aqualab chilled mirror (Units)	14	14	0.4481	0.0404	0.4440	0.0347	0.0116	7.81%	0.0114	
400.99	Water Activity, Miscellaneous (Units)	3	3	0.4387	0.0158	0.4387	0.0158	0.0091	3.61%	0.0047	
516.53	Arsenic, Total (As), ICP-MS, Microwave (ppm)	3	3	0.0149	0.0037	0.0149	0.0037	0.0022	25.03%	0.0018	22.00%
516.00	Arsenic, Total (As), AA, Hydride (ppm)	1	1	0.0185							
516.43	Arsenic, Total (As), ICP, Microwave (ppm)	1		20.00							
516.52	Arsenic, Total (As), ICP-MS, Open vessel (ppm)	2		0.0500							
518.53	Cadmium, ICP-MS, Microwave (ppm)	3	3	0.0220	0.0012	0.0220	0.0012	0.0007	5.65%	0.0030	22.00%
518.43	Cadmium, ICP, Microwave (ppm)	3	2	0.0583	0.0379	0.0583	0.0379			0.0011	22.00%
518.41	Cadmium, ICP, Dry ash (ppm)	1	1	0.0308							
518.52	Cadmium, ICP-MS, Open vessel (ppm)	2	1	0.0200							
520.43	Chromium, Total (Cr), ICP, Microwave (ppm)	5	4	4.882	2.455	4.882	2.455	1.227	50.28%	0.2356	12.60%
520.53	Chromium, Total (Cr), ICP-MS, Microwave (ppm)	3	3	6.198	3.653	6.198	3.653	2.109	58.93%	0.1281	12.16%
520.42	Chromium, Total (Cr), ICP, Open vessel (ppm)	2	2	2.900	0.6718						

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520.41	Chromium, Total (Cr), ICP, Dry ash (ppm)	1	1	3.281							
520.51	Chromium, Total (Cr), ICP-MS, Dry ash (ppm)	1	1	0.3050							
520.52	Chromium, Total (Cr), ICP-MS, Open vessel (ppm)	1	1	2.460							
526.53	Lead, ICP-MS, Microwave (ppm)	5	3	0.0122	0.0050	0.0122	0.0050	0.0029	40.80%	0.0055	22.00%
526.41	Lead, ICP, Dry ash (ppm)	1	1	0.1087							
526.43	Lead, ICP, Microwave (ppm)	2	1	0.5498							
526.52	Lead, ICP-MS, Open vessel (ppm)	2		0.0500							
529.99	Mercury, Miscellaneous (ppb)	5	3	70.57	120.8	70.57	120.8			0.2690	22.00%
539.43	Nickel, ICP, Microwave (ppm)	4	3	5.374	1.285	5.374	1.285	0.7420	23.91%	0.2275	12.42%
539.53	Nickel, ICP-MS, Microwave (ppm)	2	2	6.345	1.046						
539.41	Nickel, ICP, Dry ash (ppm)	1	1	5.045							
539.51	Nickel, ICP-MS, Dry ash (ppm)	1	1	2.600							
539.52	Nickel, ICP-MS, Open vessel (ppm)	1	1	3.770							
706.99	Caprylic acid (8:0), Miscellaneous (%) (w/w))	1		0.0500							
708.99	Capric acid (10:0), Miscellaneous (%) (w/w))	1		0.0500							
710.99	Lauric Acid (12:0), Miscellaneous (%) (w/w))	1		0.0500							
714.99	Myristic Acid (14:0), Miscellaneous (%) (w/w))	1	1	0.3250							
716.99	Palmitic Acid (16:0), Miscellaneous (%) (w/w))	1	1	17.71							
718.99	Palmitoleic Acid (9c-16:1), Miscellaneous (%) (w/w))	1	1	0.2150							
722.99	Stearic Acid (18:0), Miscellaneous (%) (w/w))	1	1	2.225							
724.99	Oleic Acid (9c-18:1), Miscellaneous (%) (w/w))	1	1	33.35							
726.99	Linoleic Acid (9c,12c-18:2), Miscellaneous (%) (w/w))	1	1	40.16							
728.99	alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (%) (w/w))	1	1	1.420							
730.99	Arachidic Acid (20:0), Miscellaneous (%) (w/w))	1	1	0.2450							
740.99	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (%) (w/w))	1		0.0500							
742.99	Behenic Acid (22:0), Miscellaneous (%) (w/w))	1		0.0500							
744.99	Erucic Acid (13c-22:1), Miscellaneous (%) (w/w))	1	1	0.0750							
746.99	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (%) (w/w))	1		0.0500							
748.99	Lignoceric Acid (24:0), Miscellaneous (%) (w/w))	1	1	0.2250							
750.99	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (%) (w/w))	1		0.0500							
754.99	Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (%) (w/w))	1	1	0.0700							
756.99	Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (%) (w/w))	1	1	1.955							
758.99	Total Saturated Fatty Acids, Miscellaneous (%) (w/w))	1	1	21.09							
762.99	Total Monounsaturated Fatty Acids, Miscellaneous (%) (w/w))	1	1	34.52							
766.99	Total Polyunsaturated Fatty Acids, Miscellaneous (%) (w/w))	1	1	41.63							

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.



AAFCO
Association of American Feed Control Officials



Animal Feed Scheme

Methods Reported: 115

Oats

Method Precision Report

Labs Reporting: 150

Test Material Code # 202532

Issue Date : 01/31/2026

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 (%)	34	30	9.643	1.625	0.3517	0.1867	0.3982	3.51%	1.86%	3.97%	2.133
001.99	Loss on Drying, Miscellaneous (%)	15	13	9.716	0.8923	0.5593	0.0891	0.5663	5.65%	0.90%	5.72%	6.358
002.01	Protein, Crude, Auto Kjel-Foss (%)	15	14	12.28	0.3278	0.1605	0.1243	0.2030	1.30%	1.01%	1.64%	1.633
002.05	Protein, Crude, Copper, Boric Acid (%)	14	12	12.59	0.3610	0.1513	0.1211	0.1938	1.21%	0.97%	1.55%	1.600
002.06	Protein, Crude, Combustion Nitrogen Analyzer (%)	102	96	12.77	0.5186	0.4019	0.3176	0.5122	3.16%	2.50%	4.03%	1.613
002.11	Protein, Crude, NIR (%)	6	6	12.44	2.009	2.001	0.2451	2.016	16.09%	1.97%	16.21%	8.226
003.00	Fat, Crude, Diethyl Ether Ext., Direct (%)	9	9	3.837	0.5216	0.5157	0.1110	0.5275	13.44%	2.89%	13.75%	4.751
003.06	Fat, Crude, Pet Ether (%)	13	11	3.816	0.5323	0.2668	0.0716	0.2762	6.66%	1.79%	6.90%	3.859
003.09	Fat, Crude, Randall, Diethyl Ether Ext (%)	8	8	3.904	0.2377	0.2276	0.0970	0.2474	5.83%	2.48%	6.34%	2.551
003.10	Fat, Crude, Randall, Pet Ether (%)	21	20	3.724	0.3071	0.2383	0.1183	0.2661	6.47%	3.21%	7.22%	2.250
003.11	Fat, Crude, NIR (%)	5	5	4.993	1.952	1.945	0.2383	1.959	38.95%	4.77%	39.24%	8.223
003.12	Fat, Crude, Hexane Ext (%)	5	5	4.079	0.4941	0.4705	0.2133	0.5166	11.54%	5.23%	12.67%	2.422
003.14	Fat, Crude, Ankom (%)	53	49	3.532	0.4456	0.2849	0.1176	0.3082	8.02%	3.31%	8.68%	2.621
004.00	Fiber, Crude, Asbestos Free (%)	7	6	10.01	1.620	0.5011	0.3632	0.6189	4.73%	3.43%	5.84%	1.704
004.06	Fiber, Crude, Fibertec (%)	17	14	11.02	0.8172	0.5099	0.1575	0.5336	4.70%	1.45%	4.92%	3.389
004.07	Fiber, Crude, ANKOM (%)	70	63	10.84	0.9498	0.6154	0.2666	0.6707	5.68%	2.46%	6.19%	2.516
004.11	Fiber, Crude, NIR (%)	5	5	7.722	3.120	3.105	0.4283	3.135	40.21%	5.55%	40.59%	7.319
005.00	Ash, 2h @ 600°C (%)	85	77	3.001	0.1529	0.1014	0.0547	0.1152	3.39%	1.83%	3.85%	2.107
005.05	Ash, 3h @ 550°C (%)	20	18	3.009	0.0819	0.0609	0.0418	0.0738	2.03%	1.39%	2.46%	1.767
005.99	Ash, Miscellaneous (%)	5	5	2.995	0.0658	0.0581	0.0435	0.0726	1.94%	1.45%	2.42%	1.670
008.02	Fiber, Acid Detergent, Crucible (%)	8	6	13.98	2.518	0.9253	0.2630	0.9619	6.22%	1.77%	6.47%	3.658
008.08	Fiber, Acid Detergent, Filter Bag - ANKOM (%)	43	41	14.04	1.499	1.189	0.3313	1.235	8.39%	2.34%	8.71%	3.726
009.07	Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%)	7	7	27.43	3.660	3.630	0.6581	3.689	13.24%	2.40%	13.45%	5.606
009.09	Fiber, Neutral Detergent, Filter Bag - ANKOM (%)	40	36	28.31	1.919	1.520	0.4458	1.584	5.37%	1.58%	5.60%	3.553
010.11	Moisture, NIR (%)	5	5	9.904	0.9952	0.9869	0.1817	1.003	9.96%	1.83%	10.13%	5.524
010.99	Moisture, Miscellaneous (%)	15	13	9.993	0.9730	0.5539	0.0818	0.5599	5.42%	0.80%	5.48%	6.844
011.01	Loss on Drying, HT, 135°C 2hr (%)	59	54	10.44	0.5797	0.4458	0.0955	0.4560	4.25%	0.91%	4.35%	4.774
011.99	Loss on Drying, HT, High Temp. Methods Miscellaneous (%)	5	5	10.51	0.3252	0.3162	0.1078	0.3341	3.01%	1.03%	3.18%	3.099

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
012.00	Starch, Polarimetric (Ewers) (%)	13	13	38.79	1.223	1.152	0.5809	1.290	2.97%	1.50%	3.33%	2.221
012.01	Starch, Enzymatic-Colorimetric Method (Megazyme) (%)	10	10	36.77	2.290	2.150	1.113	2.421	5.85%	3.03%	6.58%	2.175
012.04	Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%)	8	7	39.31	0.8974	0.7909	0.6698	1.036	2.02%	1.71%	2.64%	1.547
013.00	Fat, Pretreat, Acid hydrolysis (%)	16	14	4.828	0.6307	0.3512	0.1951	0.4018	7.08%	3.93%	8.10%	2.059
013.02	Fat, Pretreat, Mojonner, Bak Ext, Acid hydrolysis (%)	12	11	5.353	0.5258	0.2785	0.2389	0.3670	5.33%	4.57%	7.02%	1.536
013.13	Fat, Pretreat, Ankom- Acid Hydrolysis (%)	15	13	4.743	0.5402	0.2647	0.1760	0.3179	5.73%	3.81%	6.88%	1.806
015.43	Aluminum, ICP, Microwave (ppm)	6	5	14.06	4.578	4.559	0.5859	4.597	32.43%	4.17%	32.70%	7.846
019.08	Calcium, EDTA (%)	8	8	0.1969	0.0888	0.0871	0.0246	0.0905	44.25%	12.51%	45.98%	3.677
019.31	Calcium, AAS, Dry ash (%)	8	6	0.0697	0.0297	0.0290	0.0035	0.0292	44.80%	5.41%	45.13%	8.340
019.41	Calcium, ICP, Dry ash (%)	17	16	0.0704	0.0136	0.0064	0.0062	0.0089	9.52%	9.13%	13.19%	1.445
019.42	Calcium, ICP, Open vessel (%)	19	17	0.0744	0.0144	0.0111	0.0046	0.0120	14.49%	5.97%	15.68%	2.624
019.43	Calcium, ICP, Microwave (%)	30	26	0.0686	0.0128	0.0049	0.0027	0.0056	7.38%	4.13%	8.46%	2.049
019.53	Calcium, ICP-MS, Microwave (%)	5	5	0.0678	0.0058	0.0055	0.0024	0.0060	8.14%	3.56%	8.88%	2.499
021.43	Cobalt, ICP, Microwave (ppm)	8	5	0.4542	0.1070	0.1059	0.0214	0.1080	23.31%	4.71%	23.78%	5.044
022.41	Copper, ICP, Dry ash (ppm)	12	9	5.355	5.020	1.001	0.1991	1.021	26.73%	5.32%	27.25%	5.127
022.42	Copper, ICP, Open vessel (ppm)	17	15	4.670	1.331	0.8177	0.3573	0.8924	16.58%	7.25%	18.10%	2.498
022.43	Copper, ICP, Microwave (ppm)	24	19	4.363	1.208	0.9410	0.2231	0.9671	22.77%	5.40%	23.40%	4.334
025.41	Iron, ICP, Dry ash (ppm)	16	13	59.90	16.13	9.440	1.272	9.525	17.09%	2.30%	17.24%	7.488
025.42	Iron, ICP, Open vessel (ppm)	17	16	59.40	16.76	8.358	3.126	8.924	14.96%	5.59%	15.97%	2.855
025.43	Iron, ICP, Microwave (ppm)	27	23	63.49	18.70	14.69	1.978	14.82	24.20%	3.26%	24.42%	7.496
027.41	Magnesium, ICP, Dry ash (%)	14	14	0.1290	0.0102	0.0100	0.0030	0.0104	7.75%	2.30%	8.09%	3.517
027.42	Magnesium, ICP, Open vessel (%)	20	20	0.1378	0.0105	0.0090	0.0075	0.0117	6.57%	5.43%	8.52%	1.570
027.43	Magnesium, ICP, Microwave (%)	30	25	0.1312	0.0112	0.0069	0.0053	0.0087	5.24%	4.01%	6.60%	1.647
028.41	Manganese, ICP, Dry ash (ppm)	8	7	48.75	3.647	3.872	1.020	4.004	7.94%	2.09%	8.21%	3.926
028.42	Manganese, ICP, Open vessel (ppm)	17	16	49.89	3.401	2.151	1.518	2.632	4.36%	3.08%	5.34%	1.734
028.43	Manganese, ICP, Microwave (ppm)	18	18	50.00	3.575	3.425	1.451	3.720	6.85%	2.90%	7.44%	2.564
031.01	Phosphorus, Photometric (%)	21	17	0.3299	0.0288	0.0170	0.0116	0.0206	5.03%	3.42%	6.08%	1.777
031.41	Phosphorus, ICP, Dry ash (%)	16	15	0.3375	0.0326	0.0248	0.0094	0.0265	7.46%	2.84%	7.99%	2.812
031.42	Phosphorus, ICP, Open vessel (%)	20	20	0.3358	0.0305	0.0285	0.0154	0.0324	8.47%	4.60%	9.64%	2.097
031.43	Phosphorus, ICP, Microwave (%)	32	30	0.3459	0.0247	0.0211	0.0172	0.0272	6.08%	4.95%	7.84%	1.584
031.99	Phosphorus, Miscellaneous (%)	6	6	0.3239	0.0262	0.0244	0.0137	0.0279	7.52%	4.22%	8.63%	2.045
032.41	Potassium, ICP, Dry ash (%)	15	13	0.4009	0.0339	0.0250	0.0110	0.0273	6.32%	2.78%	6.91%	2.485
032.42	Potassium, ICP, Open vessel (%)	19	18	0.4104	0.0412	0.0322	0.0269	0.0420	7.77%	6.48%	10.11%	1.562
032.43	Potassium, ICP, Microwave (%)	32	29	0.4066	0.0318	0.0315	0.0081	0.0325	7.76%	1.99%	8.01%	4.024
033.00	Salt as chloride, Sol Cl (%)	6	6	0.1821	0.0929	0.0914	0.0233	0.0943	50.20%	12.77%	51.80%	4.056
033.01	Salt as chloride, Poten Cl (%)	19	17	0.1126	0.0314	0.0202	0.0050	0.0208	18.89%	4.64%	19.45%	4.194
033.99	Salt, Miscellaneous (%)	11	9	0.0727	0.0704	0.0456	0.0133	0.0475	82.47%	24.08%	85.91%	3.567
034.53	Selenium, Total (Se), ICP-MS, Microwave (ppm)	8	7	0.4074	0.0754	0.0339	0.0300	0.0453	8.83%	7.80%	11.78%	1.511

Method Code	Analyte and Method	Total # Labs Submitting	# Labs used in Precision Calcs	Precision Mean	Precision SD	Between Labs SL	Within Labs sr	Reproducibility SR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
035.41	Sodium, ICP, Dry ash (%)	18	15	0.0126	0.0067	0.0045	0.0006	0.0045	39.65%	5.45%	40.03%	7.348
035.42	Sodium, ICP, Open vessel (%)	17	14	0.0140	0.0078	0.0043	0.0011	0.0044	35.12%	8.79%	36.21%	4.120
035.43	Sodium, ICP, Microwave (%)	22	17	0.0194	0.0299	0.0128	0.0010	0.0129	107.80%	8.77%	108.16%	12.33
036.04	Sulfur, LECO (%)	5	5	0.1918	0.0357	0.0351	0.0096	0.0364	18.29%	4.99%	18.96%	3.799
036.42	Sulfur, ICP, Open vessel (%)	18	16	0.1632	0.0138	0.0094	0.0040	0.0102	5.73%	2.40%	6.21%	2.585
036.43	Sulfur, ICP, Microwave (%)	22	20	0.1685	0.0118	0.0109	0.0064	0.0126	6.45%	3.82%	7.50%	1.965
037.41	Zinc, ICP, Dry ash (ppm)	14	13	29.64	2.461	1.776	0.9352	2.007	6.08%	3.20%	6.88%	2.146
037.42	Zinc, ICP, Open vessel (ppm)	18	15	29.51	4.752	3.123	0.6317	3.187	10.77%	2.18%	10.99%	5.045
037.43	Zinc, ICP, Microwave (ppm)	28	25	30.87	11.35	3.139	1.168	3.349	10.92%	4.06%	11.66%	2.868
038.42	Molybdenum, ICP, Open vessel (ppm)	6	6	1.023	0.2945	0.2790	0.1333	0.3092	27.27%	13.03%	30.22%	2.319
038.43	Molybdenum, ICP, Microwave (ppm)	9	8	0.9913	0.2153	0.2123	0.0504	0.2182	21.42%	5.08%	22.02%	4.332
042.00	Chloride, Titrimetric (%)	7	5	0.0746	0.0323	0.0058	0.0035	0.0067	9.37%	5.65%	10.94%	1.938
109.02	Vitamin E, LC (IU / kg)	8	7	5.612	0.7374	0.6673	0.4437	0.8013	11.89%	7.91%	14.28%	1.806
120.00	Alanine, Post-col Ninhydrin Der (%)	13	11	0.5824	0.0194	0.0199	0.0041	0.0204	3.43%	0.71%	3.50%	4.952
120.05	Alanine, Pre-col AQC Der (%)	6	6	0.5983	0.0379	0.0375	0.0077	0.0383	6.26%	1.29%	6.39%	4.953
121.00	Arginine, Post-col Ninhydrin Der (%)	13	12	0.8165	0.0187	0.0173	0.0086	0.0193	2.11%	1.05%	2.36%	2.250
121.05	Arginine, Pre-col AQC Der (%)	6	6	0.7904	0.0419	0.0364	0.0294	0.0468	4.61%	3.71%	5.92%	1.593
122.00	Aspartic, Post-col Ninhydrin Der (%)	13	12	1.005	0.0237	0.0226	0.0103	0.0248	2.25%	1.02%	2.47%	2.419
122.05	Aspartic, Pre-col AQC Der (%)	6	6	1.045	0.0882	0.0872	0.0178	0.0890	8.35%	1.71%	8.52%	4.993
124.00	Cysteine/Cystine, PAO Post-col Ninhydry (%)	12	12	0.3515	0.0243	0.0240	0.0051	0.0246	6.84%	1.44%	6.99%	4.852
124.05	Cysteine/Cystine, PAO Pre-col AQC Der (%)	6	6	0.3221	0.0386	0.0382	0.0077	0.0390	11.87%	2.38%	12.11%	5.085
125.00	Glutamic, Post-col Ninhydrin Der (%)	13	12	2.576	0.1169	0.1202	0.0202	0.1219	4.68%	0.78%	4.74%	6.049
125.05	Glutamic, Pre-col AQC Der (%)	6	6	2.587	0.1462	0.1435	0.0391	0.1488	5.55%	1.51%	5.75%	3.804
126.00	Glycine, Post-col Ninhydrin Der (%)	13	10	0.6006	0.0146	0.0107	0.0044	0.0116	1.79%	0.74%	1.94%	2.616
126.05	Glycine, Pre-col AQC Der (%)	6	6	0.5802	0.0250	0.0229	0.0140	0.0268	3.95%	2.42%	4.63%	1.915
127.00	Histidine, Post-col Ninhydrin Der (%)	13	11	0.2737	0.0120	0.0076	0.0041	0.0087	2.81%	1.50%	3.19%	2.121
127.05	Histidine, Pre-col AQC Der (%)	6	5	0.2618	0.0150	0.0120	0.0040	0.0127	4.52%	1.52%	4.77%	3.130
128.00	Isoleucine, Post-col Ninhydrin Der (%)	13	11	0.4719	0.0192	0.0127	0.0080	0.0150	2.70%	1.70%	3.19%	1.879
128.05	Isoleucine, Pre-col AQC Der (%)	6	5	0.4646	0.0433	0.0214	0.0046	0.0219	4.46%	0.95%	4.56%	4.779
129.00	Leucine, Post-col Ninhydrin Der (%)	13	12	0.9183	0.0334	0.0171	0.0127	0.0213	1.88%	1.39%	2.34%	1.680
129.05	Leucine, Pre-col AQC Der (%)	6	6	0.8977	0.0341	0.0321	0.0163	0.0360	3.58%	1.82%	4.01%	2.209
130.00	L-Lysine, Post-col Ninhydrin Der (%)	13	13	0.5110	0.0174	0.0166	0.0073	0.0181	3.25%	1.42%	3.55%	2.494
130.05	L-Lysine, Pre-col AQC Der (%)	6	6	0.5176	0.0349	0.0339	0.0113	0.0358	6.56%	2.19%	6.91%	3.154
131.00	Methionine, PAO Post-col Ninhydrin Der (%)	12	11	0.2182	0.0149	0.0089	0.0060	0.0107	4.13%	2.80%	4.99%	1.782
131.05	Methionine, PAO Pre-col AQC Der (%)	6	5	0.2189	0.0153	0.0131	0.0017	0.0132	5.89%	0.76%	5.94%	7.772
132.00	Phenylalanine, Post-col Ninhydrin Der (%)	13	10	0.6470	0.0321	0.0217	0.0064	0.0227	3.41%	1.01%	3.55%	3.531
132.05	Phenylalanine, Pre-col AQC Der (%)	6	6	0.6128	0.0155	0.0097	0.0170	0.0196	1.58%	2.77%	3.19%	1.151
133.00	Proline, Post-col Ninhydrin Der (%)	13	12	0.6714	0.0456	0.0449	0.0107	0.0462	6.69%	1.60%	6.88%	4.314

Test Material Code # 202532

Issue Date : 01/31/2026

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
133.05	Proline, Pre-col AQC Der (%)	6	6	0.6698	0.0194	0.0186	0.0078	0.0201	2.77%	1.16%	3.01%	2.587
134.00	Serine, Post-col Ninhydrin Der (%)	13	11	0.5782	0.0307	0.0229	0.0072	0.0240	3.92%	1.24%	4.11%	3.320
134.05	Serine, Pre-col AQC Der (%)	6	5	0.5923	0.0168	0.0171	0.0060	0.0182	2.88%	1.01%	3.05%	3.027
135.00	Threonine, Post-col Ninhydrin Der (%)	13	12	0.4197	0.0139	0.0132	0.0070	0.0150	3.15%	1.68%	3.57%	2.127
135.05	Threonine, Pre-col AQC Der (%)	6	6	0.4264	0.0253	0.0244	0.0094	0.0262	5.73%	2.21%	6.14%	2.778
136.03	Tryptophan, Alka-Hydrol + IS RP LC FI (%)	5	5	0.1804	0.0254	0.0252	0.0039	0.0255	13.98%	2.16%	14.15%	6.550
137.00	Tyrosine, Post-col Ninhydrin Der (%)	12	10	0.3589	0.0612	0.0314	0.0097	0.0329	8.51%	2.62%	8.91%	3.401
137.05	Tyrosine, Pre-col AQC Der (%)	6	6	0.3858	0.0277	0.0267	0.0104	0.0287	6.93%	2.69%	7.43%	2.760
138.00	Valine, Post-col Ninhydrin Der (%)	13	12	0.6437	0.0202	0.0197	0.0060	0.0206	3.07%	0.94%	3.21%	3.424
138.05	Valine, Pre-col AQC Der (%)	6	6	0.6171	0.0457	0.0452	0.0101	0.0463	7.32%	1.63%	7.50%	4.591
400.01	Water Activity, Aqualab chilled mirror (Units)	14	12	0.4481	0.0404	0.0258	0.0086	0.0272	5.82%	1.94%	6.13%	3.165

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