



**AAFCO**  
Association of American Feed Control Officials



**Animal Feed Scheme**  
**Fish Feed, Multi-Species**  
**Test Material Code # 202327**

**Analyte Summary Report**

**# Labs Reporting: 172**  
**# Analytes Reported: 114**  
**Issue Date : 08/31/2023**

Analyte Group Code	Analyte and Method	Total # Tests Submitted	# Tests in Robust Calcs	Raw Mean	Raw SD	Assigned Value Robust Mean	AAFCO #fp Robust SD	Uncertainty (U) Robust	% RSD - Robust	Average Range (Rob R-bar)	Thompson Horwitz %RSD
000	Urea (%)	1	1	0.2000							
001	Loss on Drying (%)	74	72	7.706	0.5804	7.793	0.3057	0.0450	3.92%	0.1067	2.94%
002	Protein, Crude (%)	169	167	36.77	0.5303	36.78	0.4717	0.0456	1.28%	0.1841	1.65%
003	Fat, Crude (%)	132	130	4.062	0.4632	4.025	0.2627	0.0288	6.53%	0.1235	3.24%
004	Fiber, Crude (%)	116	115	5.769	0.9527	5.753	0.7363	0.0858	12.80%	0.2559	3.07%
005	Ash (%)	133	129	8.747	0.3106	8.730	0.2414	0.0266	2.77%	0.0736	2.89%
006	Total Sugars (%)	5	4	5.103	0.8755	5.103	0.8755	0.4378	17.16%	0.0570	3.13%
008	Fiber, Acid Detergent (%)	61	60	10.28	1.898	10.28	1.985	0.3203	19.30%	0.2829	2.82%
009	Fiber, Neutral Detergent (%)	56	56	16.98	2.818	16.84	2.693	0.4499	15.99%	0.6780	2.44%
010	Moisture (%)	19	18	7.820	0.4812	7.863	0.4256	0.1254	5.41%	0.0636	2.93%
011	Loss on Drying, HT (%)	72	70	8.490	0.5208	8.579	0.3082	0.0460	3.59%	0.1011	2.89%
012	Starch (%)	38	37	15.41	1.686	15.52	1.256	0.2582	8.10%	0.3476	2.54%
013	Fat, Pretreat (%)	64	63	6.191	0.7241	6.221	0.6862	0.1081	11.03%	0.1790	3.04%
015	Aluminum (ppm)	17	17	85.20	32.92	86.11	35.38	10.73	41.09%	2.978	8.18%
017	Boron (ppm)	20	19	12.83	3.125	13.43	1.332	0.3819	9.92%	0.7928	10.82%
019	Calcium (%)	126	124	1.366	0.0913	1.366	0.0731	0.0082	5.35%	0.0288	3.82%
021	Cobalt (ppm)	24	21	0.9601	0.2212	0.9711	0.2252	0.0614	23.19%	0.0796	16.07%
022	Copper (ppm)	96	92	17.11	2.747	17.33	1.745	0.2274	10.07%	0.7761	10.41%
025	Iron (ppm)	86	85	315.4	58.04	319.0	29.06	3.940	9.11%	8.932	6.72%
027	Magnesium (%)	93	91	0.4823	0.0275	0.4812	0.0253	0.0033	5.25%	0.0142	4.47%
028	Manganese (ppm)	91	90	85.20	8.234	86.20	4.893	0.6446	5.68%	1.733	8.18%
030	Nitrate (%)	1	1	0.0038							
031	Phosphorus (%)	124	121	1.093	0.1048	1.104	0.0566	0.0064	5.13%	0.0264	3.94%
032	Potassium (%)	94	92	1.255	0.1011	1.261	0.0646	0.0084	5.12%	0.0286	3.86%
033	Salt as chloride (%)	64	62	0.9081	0.1393	0.9314	0.0708	0.0112	7.61%	0.0266	4.04%
034	Selenium, Total (Se) (ppm)	24	21	0.5652	0.1844	0.5399	0.1416	0.0386	26.23%	0.0255	17.55%
035	Sodium (%)	80	78	0.4208	0.0318	0.4202	0.0213	0.0030	5.07%	0.0105	4.56%
036	Sulfur (%)	49	47	0.5199	0.0336	0.5203	0.0344	0.0063	6.61%	0.0143	4.41%
037	Zinc (ppm)	94	90	213.3	20.86	213.0	17.08	2.250	8.02%	4.826	7.14%

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038	Molybdenum (ppm)	27	24	1.455	0.2815	1.460	0.2486	0.0634	17.03%	0.1008	15.11%
040	Barium (ppm)	2	2	6.276	0.5363						
041	Vanadium (ppm)	3	2	0.3049	0.0069	0.3049	0.0069	0.0049	2.27%	0.0163	19.13%
042	Chloride (%)	6	6	0.5383	0.1161	0.5590	0.0799	0.0408	14.29%	0.0267	4.37%
101	Choline Chloride (ppm)	1	1	1,920							
102	Niacin (ppm)	6	6	60.66	48.06	55.02	40.75	20.79	74.06%	2.787	8.75%
103	Pantothenic Acid (ppm)	4	4	38.61	4.080	38.61	4.080	2.040	10.57%	2.290	9.23%
104	Riboflavin (ppm)	6	6	7.327	1.972	7.327	2.236	1.141	30.53%	0.3867	11.85%
105	Thiamine (ppm)	6	6	6.754	1.797	6.754	2.038	1.040	30.17%	0.6150	12.00%
106	Vitamin A (KU / kg)	9	6	1.355	0.3121	1.355	0.3539	0.1806	26.12%	0.0915	
107	Vitamin B12 (ppb)	3	3	59.68	5.544	59.68	5.544	3.201	9.29%	1.550	22.00%
108	Vitamin D3 (KU / kg)	7	7	0.8680	0.1455	0.8377	0.0853	0.0403	10.18%	0.1092	
109	Vitamin E (IU / kg)	12	11	146.1	23.02	146.1	26.10	9.837	17.86%	5.907	
111	Vitamin C, Phosphorylated (ppm)	2	1	45.95							
112	Pyridoxine (µg / g)	5	4	8.859	2.944	8.859	2.944	1.472	33.24%	0.0700	11.52%
113	Folic Acid (ppm)	4	4	3.295	0.8375	3.295	0.8375	0.4188	25.42%	0.3795	13.37%
114	Biotin (ppm)	3	3	0.9568	0.6332	0.9568	0.6332	0.3656	66.18%	0.1123	16.10%
115	Non Protein N (NPN) (%)	2	2	0.4652	0.5023						
118	Peroxide value (meq/kg)	2	2	12.34	7.439						
120	Alanine (%)	30	29	1.682	0.0978	1.685	0.0717	0.0166	4.25%	0.0268	3.70%
121	Arginine (%)	30	29	3.021	0.1716	3.021	0.1771	0.0411	5.86%	0.0497	3.39%
122	Aspartic (%)	30	29	3.102	0.1496	3.110	0.1082	0.0251	3.48%	0.0343	3.37%
124	Cysteine/Cystine (%)	30	29	0.8667	0.1394	0.8740	0.0984	0.0228	11.25%	0.0201	4.08%
125	Glutamic (%)	30	30	5.751	0.2838	5.761	0.2354	0.0537	4.09%	0.0854	3.07%
126	Glycine (%)	30	29	1.971	0.1547	1.965	0.0535	0.0124	2.72%	0.0178	3.61%
127	Histidine (%)	30	29	0.8029	0.0481	0.8038	0.0501	0.0116	6.23%	0.0144	4.13%
128	Isoleucine (%)	30	30	1.417	0.1243	1.416	0.0901	0.0206	6.36%	0.0201	3.80%
129	Leucine (%)	30	30	2.579	0.1148	2.594	0.0893	0.0204	3.44%	0.0294	3.47%
130	L-Lysine (%)	32	31	1.524	0.1010	1.528	0.0820	0.0184	5.37%	0.0460	3.75%
131	Methionine (%)	31	30	0.4820	0.0461	0.4815	0.0349	0.0080	7.24%	0.0118	4.46%
132	Phenylalanine (%)	30	29	1.817	0.1192	1.815	0.0760	0.0176	4.19%	0.0396	3.66%
133	Proline (%)	29	29	2.173	0.1538	2.173	0.1503	0.0349	6.92%	0.0528	3.56%
134	Serine (%)	30	29	2.285	0.1969	2.308	0.1146	0.0266	4.97%	0.0347	3.53%
135	Threonine (%)	31	29	1.386	0.1059	1.395	0.0710	0.0165	5.09%	0.0254	3.80%
136	Tryptophan (%)	19	19	0.3956	0.0704	0.4044	0.0578	0.0166	14.30%	0.0105	4.58%
137	Tyrosine (%)	26	25	1.091	0.1562	1.076	0.1354	0.0338	12.58%	0.0246	3.96%
138	Valine (%)	30	30	1.912	0.1316	1.917	0.1230	0.0281	6.41%	0.0425	3.63%
139	Taurine (%)	6	4	0.0211	0.0162	0.0211	0.0162	0.0123	76.81%		7.15%
160	Fructose (%)	2	2	0.1200	0.1061						
161	Galactose (%)	1		0.0000							

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162	Glucose (%)	2	1	0.0300							
163	Lactose (%)	2		0.0000							
164	Maltose (%)	2		0.0000							
165	Sucrose (%)	2	2	2.478	0.0813						
166	Raffinose (%)	2	2	1.778	0.2227						
167	Stachyose (%)	2	2	0.8275	0.0106						
400	Water Activity (Units)	16	16	0.5004	0.0355	0.4987	0.0233	0.0073	4.66%	0.0064	
516	Arsenic, Total (As) (ppm)	7	4	0.2365	0.0553	0.2365	0.0553	0.0346	23.40%	0.0084	19.87%
518	Cadmium (ppm)	12	10	0.0828	0.0145	0.0813	0.0092	0.0037	11.38%	0.0072	22.00%
520	Chromium, Total (Cr) (ppm)	17	15	2.713	0.9373	2.740	1.004	0.3240	36.64%	0.0746	13.75%
526	Lead (ppm)	11	7	0.1438	0.0529	0.1428	0.0578	0.0273	40.45%	0.0149	21.44%
529	Mercury (ppb)	3	1								
539	Nickel (ppm)	10	10	4.973	1.305	4.719	0.7432	0.2938	15.75%	0.2551	12.67%
702	Butyric Acid (4:0) (%)	1		0.0200							
704	Caproic Acid (6:0) (%)	1		0.0200							
706	Caprylic acid (8:0) (%) (w/w)	2		0.0200							
708	Capric acid (10:0) (%) (w/w)	2	1	0.1050							
710	Lauric Acid (12:0) (%) (w/w)	4	2	0.0501	0.0635	0.0501	0.0635	0.0449	126.75%	0.0052	6.28%
714	Myristic Acid (14:0) (%) (w/w)	3	3	0.2960	0.4322	0.2960	0.4322	0.2495	146.02%	0.0040	4.80%
716	Palmitic Acid (16:0) (%) (w/w)	3	3	7.415	10.84	7.415	10.84	6.258	146.19%	0.0453	2.96%
718	Palmitoleic Acid (9c-16:1) (%) (w/w)	4	3	0.1524	0.0056	0.1524	0.0056	0.0032	3.68%		5.31%
720	Margaric acid (17:0) (%) (w/w)	1		0.0200							
722	Stearic Acid (18:0) (%) (w/w)	3	3	1.626	2.389	1.626	2.389	1.379	146.93%	0.0051	3.72%
724	Oleic Acid (9c-18:1) (%) (w/w)	3	3	11.87	17.76	11.87	17.76	10.25	149.64%	0.0234	2.76%
726	Linoleic Acid (9c,12c-18:2) (%) (w/w)	4	3	1.825	0.0441	1.825	0.0441	0.0255	2.42%	0.0346	3.65%
728	alpha-Linolenic Acid (9c,12c,15c-18:3) (%) (w/w)	4	3	0.1035	0.0025	0.1035	0.0025	0.0015	2.44%	0.0030	5.63%
730	Arachidic Acid (20:0) (%) (w/w)	3	3	0.1884	0.2742	0.1884	0.2742	0.1583	145.50%	0.0038	5.14%
732	Gondoic Acid (11c-20:1) (%) (w/w)	2	1	0.0187							
736	Arachidonic Acid (5c,8c,11c,14c-20:4) (%) (w/w)	2	1	0.0120							
740	Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5) (%) (w/w)	4	3	0.1074	0.1582	0.1074	0.1582	0.0913	147.28%	0.0105	5.60%
742	Behenic Acid (22:0) (%) (w/w)	3	2	0.1678	0.2082	0.1678	0.2082	0.1472	124.06%	0.0058	5.23%
744	Erucic Acid (13c-22:1) (%) (w/w)	3									
746	Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5) (%) (w/w)	4									
748	Lignoceric Acid (24:0) (%) (w/w)	3	3	0.1902	0.2770	0.1902	0.2770	0.1599	145.68%	0.0159	5.13%
750	Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6) (%) (w/w)	4	3	0.0995	0.1433	0.0995	0.1433	0.0828	144.09%	0.0055	5.66%
752	Nervonic Acid (24:1) isomers (%) (w/w)	2		0.0050							
754	Total n-3 Polyunsaturated (Omega-3) Fatty Acids (%) (w/w)	2	2	0.1420	0.0028						
756	Total n-6 Polyunsaturated (Omega-6) Fatty Acids (%) (w/w)	2	2	1.827	0.0180						
758	Total Saturated Fatty Acids (%) (w/w)	2	2	14.26	17.97						
762	Total Monounsaturated Fatty Acids (%) (w/w)	1	1	36.59							

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764	Total cis Monounsaturated Fatty Acids (% (w/w))	1	1	1.858							
766	Total Polyunsaturated Fatty Acids (% (w/w))	1	1	33.30							
768	Total cis Polyunsaturated Fatty Acids (% (w/w))	1	1	1.969							
770	Total Fat (equivalent to NLEA) (% (w/w))	1	1	5.689							
772	Total Fatty Acids (% (w/w))	2	2	5.410	0.0395						

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.