



Animal Feed Scheme

Goat Feed, Medicated

Test Material Code # 202025

Method Summary Report

(Precision Report Follows)

Labs Reporting: 157

Methods Reported: 393

Issue Date : 06/30/2020

| 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 (%) | 2 | 1 | 0.9000 | | | | | | | |
| 001.07 | Loss on Drying, 104°C 3 hr, in malt (%) | 43 | 42 | 9.694 | 0.4761 | 9.762 | 0.3052 | 0.0589 | 3.13% | 0.1274 | 2.84% |
| 001.99 | Loss on Drying, Miscellaneous (%) | 18 | 17 | 9.486 | 0.7165 | 9.550 | 0.6464 | 0.1960 | 6.77% | 0.1128 | 2.85% |
| 001.03 | Loss on Drying, Low temp. methods (%) | 5 | 4 | 9.850 | 0.1865 | 9.850 | 0.1865 | 0.1077 | 1.89% | 0.0480 | 2.83% |
| 001.00 | Loss on Drying, Vac 95°C 5 hr (%) | 2 | 2 | 9.581 | 0.3830 | | | | | | |
| 001.05 | Loss on Drying, LECO (%) | 1 | 1 | 10.58 | | | | | | | |
| 002.06 | Protein, Crude, Combustion Nitrogen Analyzer (%) | 111 | 109 | 17.31 | 0.4309 | 17.28 | 0.2796 | 0.0335 | 1.62% | 0.1641 | 2.41% |
| 002.05 | Protein, Crude, Copper, Boric Acid (%) | 23 | 22 | 17.06 | 0.1528 | 17.07 | 0.1281 | 0.0342 | 0.75% | 0.0901 | 2.42% |
| 002.01 | Protein, Crude, Auto Kjeh-Foss (%) | 8 | 8 | 16.95 | 0.3979 | 17.00 | 0.3136 | 0.1386 | 1.84% | 0.0536 | 2.43% |
| 002.11 | Protein, Crude, NIR (%) | 6 | 6 | 16.60 | 0.6526 | 16.70 | 0.5036 | 0.2570 | 3.02% | 0.1000 | 2.45% |
| 002.02 | Protein, Crude, Semiauto Autoanalyzer (%) | 2 | 2 | 16.97 | 0.0062 | | | | | | |
| 002.04 | Protein, Crude, Copper Catalyst (%) | 2 | 2 | 17.12 | 0.0230 | | | | | | |
| 002.00 | Protein, Crude, Crude (%) | 1 | 1 | 16.76 | | | | | | | |
| 002.08 | Protein, Crude, Cu/Ti (%) | 1 | 1 | 17.25 | | | | | | | |
| 002.99 | Protein, Crude, Miscellaneous (%) | 1 | 1 | 17.11 | | | | | | | |
| 003.14 | Fat, Crude, Ankom (%) | 44 | 41 | 4.479 | 0.3596 | 4.459 | 0.3400 | 0.0664 | 7.62% | 0.1019 | 3.19% |
| 003.10 | Fat, Crude, Randall, Pet Ether (%) | 19 | 18 | 4.648 | 0.2241 | 4.642 | 0.2083 | 0.0614 | 4.49% | 0.1137 | 3.17% |
| 003.06 | Fat, Crude, Pet Ether (%) | 16 | 16 | 4.733 | 0.2936 | 4.732 | 0.2779 | 0.0868 | 5.87% | 0.0750 | 3.17% |
| 003.09 | Fat, Crude, Randall, Diethyl Ether Ext (%) | 12 | 12 | 4.840 | 0.1432 | 4.850 | 0.1388 | 0.0501 | 2.86% | 0.0432 | 3.15% |
| 003.00 | Fat, Crude, Diethyl Ether Ext., Direct (%) | 9 | 9 | 4.777 | 0.4246 | 4.778 | 0.3705 | 0.1544 | 7.75% | 0.1060 | 3.16% |
| 003.13 | Fat, Crude, Randall, Hexane Ext. (%) | 9 | 9 | 4.654 | 0.3302 | 4.681 | 0.1766 | 0.0736 | 3.77% | 0.0697 | 3.17% |
| 003.11 | Fat, Crude, NIR (%) | 6 | 6 | 4.839 | 0.4165 | 4.839 | 0.4723 | 0.2410 | 9.76% | 0.0258 | 3.15% |
| 003.99 | Fat, Crude, Miscellaneous (%) | 4 | 4 | 4.486 | 0.5039 | 4.486 | 0.5039 | 0.2519 | 11.23% | 0.1025 | 3.19% |
| 003.12 | Fat, Crude, Hexane Ext (%) | 2 | 2 | 4.408 | 0.0180 | | | | | | |
| 003.01 | Fat, Crude, Diethyl Ether Ext (13th ed.), Indirect (%) | 1 | 1 | 4.860 | | | | | | | |
| 004.07 | Fiber, Crude, ANKOM (%) | 63 | 61 | 5.869 | 0.5427 | 5.837 | 0.3947 | 0.0632 | 6.76% | 0.1553 | 3.07% |
| 004.06 | Fiber, Crude, Fibertec (%) | 16 | 16 | 6.157 | 0.6338 | 6.025 | 0.2155 | 0.0674 | 3.58% | 0.1595 | 3.05% |
| 004.00 | Fiber, Crude, Asbestos Free (%) | 14 | 14 | 5.817 | 0.9266 | 5.935 | 0.5842 | 0.1952 | 9.84% | 0.1325 | 3.06% |
| 004.11 | Fiber, Crude, NIR (%) | 5 | 5 | 5.530 | 0.3054 | 5.530 | 0.3054 | 0.1366 | 5.52% | 0.0350 | 3.09% |

| 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 |
|-------------|--|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 004.03 | Fiber, Crude, Fritted Glass (%) | 3 | 3 | 5.880 | 0.4635 | 5.880 | 0.4635 | 0.2676 | 7.88% | 0.0867 | 3.06% |
| 004.01 | Fiber, Crude, Sing Filt (%) | 1 | 1 | 5.690 | | | | | | | |
| 004.99 | Fiber, Crude, Miscellaneous (%) | 1 | 1 | 6.206 | | | | | | | |
| 005.00 | Ash, 2h @ 600°C (%) | 77 | 75 | 8.116 | 0.2756 | 8.095 | 0.2144 | 0.0309 | 2.65% | 0.0746 | 2.92% |
| 005.05 | Ash, 3h @ 550°C (%) | 25 | 24 | 8.296 | 0.2151 | 8.297 | 0.2254 | 0.0575 | 2.72% | 0.0673 | 2.91% |
| 005.99 | Ash, Miscellaneous (%) | 8 | 8 | 8.249 | 0.3910 | 8.318 | 0.2621 | 0.1158 | 3.15% | 0.1019 | 2.91% |
| 005.11 | Ash, NIR (%) | 3 | 3 | 8.518 | 1.816 | 8.518 | 1.816 | 1.284 | 21.32% | 0.0633 | 2.90% |
| 005.02 | Ash, LECO (%) | 1 | 1 | 8.215 | | | | | | | |
| 005.03 | Ash, Microwave furnace (%) | 1 | 1 | 7.920 | | | | | | | |
| 006.00 | Total Sugars, As sucrose (%) | 3 | 3 | 5.300 | 0.3875 | 5.300 | 0.3875 | 0.2237 | 7.31% | 0.0880 | 3.11% |
| 006.99 | Total Sugars, Miscellaneous (%) | 1 | 1 | 6.700 | | | | | | | |
| 008.08 | Fiber, Acid Detergent, Filter Bag - ANKOM (%) | 38 | 38 | 7.742 | 0.6830 | 7.720 | 0.6782 | 0.1375 | 8.79% | 0.1893 | 2.94% |
| 008.02 | Fiber, Acid Detergent, Crucible (%) | 10 | 10 | 8.824 | 3.846 | 7.801 | 0.8726 | 0.3449 | 11.19% | 0.1690 | 2.94% |
| 008.05 | Fiber, Acid Detergent, Acid Detergent-Hach (%) | 1 | 1 | 7.970 | | | | | | | |
| 009.09 | Fiber, Neutral Detergent, Filter Bag - ANKOM (%) | 39 | 39 | 14.57 | 0.8383 | 14.52 | 0.7762 | 0.1554 | 5.35% | 0.3102 | 2.62% |
| 009.07 | Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%) | 8 | 8 | 14.91 | 1.400 | 14.91 | 1.588 | 0.7018 | 10.65% | 0.3108 | 2.59% |
| 009.99 | Fiber, Neutral Detergent, Miscellaneous (%) | 1 | 1 | 15.62 | | | | | | | |
| 010.99 | Moisture, Miscellaneous (%) | 15 | 14 | 9.883 | 0.5401 | 9.929 | 0.4918 | 0.1643 | 4.95% | 0.0731 | 2.83% |
| 010.11 | Moisture, NIR (%) | 3 | 3 | 9.993 | 1.038 | 9.993 | 1.038 | 0.5995 | 10.39% | 0.0600 | 2.83% |
| 010.03 | Moisture, Karl-Fischer (%) | 2 | 2 | 9.263 | 1.064 | | | | | | |
| 011.01 | Loss on Drying, 135°C 2hr (%) | 54 | 53 | 10.92 | 0.5044 | 10.95 | 0.4540 | 0.0779 | 4.14% | 0.0931 | 2.79% |
| 011.02 | Loss on Drying, 130°C for 2 hours (%) | 2 | 2 | 10.82 | 0.2546 | | | | | | |
| 011.99 | Loss on Drying, High Temp. Methods Miscellaneous (%) | 2 | 2 | 10.24 | 0.1234 | | | | | | |
| 012.01 | Starch, Enzymatic-Colorimetric Method (Megazyme) (%) | 11 | 11 | 32.07 | 1.884 | 31.87 | 1.571 | 0.5922 | 4.93% | 0.7107 | 1.77% |
| 012.00 | Starch, Polarimetric (Ewers) (%) | 10 | 10 | 33.68 | 0.4585 | 33.67 | 0.5146 | 0.2034 | 1.53% | 0.2380 | 1.72% |
| 012.04 | Starch, Enzymatic-Enzyme Membrane Technology (YSI) (%) | 5 | 5 | 31.40 | 1.946 | 31.40 | 1.946 | 0.8701 | 6.20% | 0.4174 | 1.78% |
| 012.03 | Starch, Enzymatic-Colorimetric Method, Miscellaneous (%) | 3 | 3 | 31.83 | 0.8527 | 31.83 | 0.8527 | 0.4923 | 2.68% | 0.6058 | 1.77% |
| 012.11 | Starch, NIR (%) | 2 | 2 | 36.13 | 2.330 | | | | | | |
| 012.20 | Starch, Dietary, Enzymatic-Colorimetric (%) | 1 | 1 | 31.76 | | | | | | | |
| 013.00 | Fat, Acid Pretreat, Acid hydrolysis (%) | 18 | 17 | 5.397 | 0.5115 | 5.405 | 0.5627 | 0.1706 | 10.41% | 0.2605 | 3.10% |
| 013.02 | Fat, Acid Pretreat, Mojonniier, Bak Ext (%) | 17 | 17 | 5.871 | 0.4171 | 5.854 | 0.4253 | 0.1289 | 7.26% | 0.2841 | 3.07% |
| 013.10 | Fat, Acid Pretreat, Soxtec-Acid Hydrolysis (%) | 4 | 4 | 5.161 | 0.3931 | 5.161 | 0.3931 | 0.1965 | 7.62% | 0.1189 | 3.12% |
| 013.13 | Fat, Acid Pretreat, Ankom- Acid Hydrolysis (%) | 5 | 4 | 5.613 | 0.3388 | 5.613 | 0.3388 | 0.1956 | 6.04% | 0.1810 | 3.09% |
| 013.08 | Fat, Base Pretreat, Roese-Gottlieb Modified (%) | 1 | 1 | 3.764 | | | | | | | |
| 015.43 | Aluminum, ICP, Microwave (ppm) | 8 | 8 | 193.0 | 12.38 | 193.0 | 14.04 | 6.204 | 7.27% | 7.777 | 7.25% |
| 015.41 | Aluminum, ICP, Dry ash (ppm) | 4 | 4 | 175.9 | 12.42 | 175.9 | 12.42 | 6.212 | 7.07% | 2.873 | 7.35% |
| 015.42 | Aluminum, ICP, Open vessel (ppm) | 2 | 2 | 104.6 | 75.10 | | | | | | |
| 015.53 | Aluminum, ICP-MS, Microwave (ppm) | 2 | 2 | 223.8 | 8.132 | | | | | | |
| 015.52 | Aluminum, ICP-MS, Open vessel (ppm) | 1 | 1 | 141.5 | | | | | | | |
| 015.99 | Aluminum, Miscellaneous (ppm) | 1 | 1 | 266.5 | | | | | | | |

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|-------------|--------------------------------------|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 017.42 | Boron, ICP, Open vessel (ppm) | 7 | 7 | 11.24 | 0.6684 | 11.24 | 0.7580 | 0.3581 | 6.74% | 0.3990 | 11.11% |
| 017.43 | Boron, ICP, Microwave (ppm) | 7 | 5 | 12.10 | 1.270 | 12.10 | 1.270 | 0.7099 | 10.49% | 0.2250 | 10.99% |
| 017.41 | Boron, ICP, Dry ash (ppm) | 4 | 4 | 11.90 | 0.5474 | 11.90 | 0.5474 | 0.2737 | 4.60% | 1.562 | 11.02% |
| 017.52 | Boron, ICP-MS, Open vessel (ppm) | 2 | 2 | 10.93 | 0.6311 | | | | | | |
| 019.41 | Calcium, ICP, Dry ash (%) | 25 | 25 | 1.534 | 0.0817 | 1.536 | 0.0856 | 0.0214 | 5.57% | 0.0320 | 3.75% |
| 019.43 | Calcium, ICP, Microwave (%) | 24 | 24 | 1.548 | 0.0920 | 1.547 | 0.0911 | 0.0232 | 5.89% | 0.0374 | 3.75% |
| 019.42 | Calcium, ICP, Open vessel (%) | 18 | 18 | 1.559 | 0.0942 | 1.565 | 0.0905 | 0.0267 | 5.78% | 0.0472 | 3.74% |
| 019.31 | Calcium, AAS, Dry ash (%) | 17 | 17 | 1.522 | 0.0717 | 1.522 | 0.0733 | 0.0222 | 4.82% | 0.0394 | 3.75% |
| 019.00 | Calcium, Ox-Mn04 Vol. (%) | 10 | 9 | 1.540 | 0.0452 | 1.541 | 0.0479 | 0.0200 | 3.11% | 0.0153 | 3.75% |
| 019.99 | Calcium, Miscellaneous (%) | 5 | 5 | 1.550 | 0.0639 | 1.550 | 0.0639 | 0.0286 | 4.12% | 0.0520 | 3.74% |
| 019.53 | Calcium, ICP-MS, Microwave (%) | 4 | 4 | 1.530 | 0.0665 | 1.530 | 0.0665 | 0.0332 | 4.34% | 0.0400 | 3.75% |
| 019.08 | Calcium, EDTA (%) | 4 | 3 | 1.528 | 0.0947 | 1.528 | 0.0947 | 0.0547 | 6.19% | 0.0049 | 3.75% |
| 019.52 | Calcium, ICP-MS, Open vessel (%) | 3 | 3 | 1.495 | 0.1386 | 1.495 | 0.1386 | 0.0800 | 9.27% | 0.1052 | 3.76% |
| 019.03 | Calcium, Semiauto (Autoanalyzer) (%) | 1 | 1 | 1.658 | | | | | | | |
| 019.09 | Calcium, Ion-selective electrode (%) | 1 | 1 | 1.595 | | | | | | | |
| 019.32 | Calcium, AAS, Open vessel (%) | 1 | 1 | 1.475 | | | | | | | |
| 019.33 | Calcium, AAS, Microwave (%) | 1 | 1 | 1.675 | | | | | | | |
| 019.44 | Calcium, ICP, Dry ash (%) | 1 | 1 | 1.515 | | | | | | | |
| 019.51 | Calcium, ICP-MS, Dry ash (%) | 1 | 1 | 1.545 | | | | | | | |
| 021.43 | Cobalt, ICP, Microwave (ppm) | 8 | 8 | 5.777 | 0.6278 | 5.773 | 0.7031 | 0.3107 | 12.18% | 0.2034 | 12.29% |
| 021.41 | Cobalt, ICP, Dry ash (ppm) | 4 | 4 | 5.166 | 0.8162 | 5.166 | 0.8162 | 0.4081 | 15.80% | 0.1619 | 12.49% |
| 021.53 | Cobalt, ICP-MS, Microwave (ppm) | 4 | 4 | 5.565 | 0.7070 | 5.565 | 0.7070 | 0.3535 | 12.70% | 0.1380 | 12.35% |
| 021.42 | Cobalt, ICP, Open vessel (ppm) | 3 | 3 | 5.411 | 0.8260 | 5.411 | 0.8260 | 0.4769 | 15.26% | 0.5760 | 12.41% |
| 021.52 | Cobalt, ICP-MS, Open vessel (ppm) | 4 | 3 | 5.060 | 0.0433 | 5.060 | 0.0433 | 0.0306 | 0.86% | 0.2133 | 12.53% |
| 021.31 | Cobalt, AAS, Dry ash (ppm) | 2 | 2 | 6.150 | 0.2828 | | | | | | |
| 022.42 | Copper, ICP, Open vessel (ppm) | 19 | 19 | 82.42 | 8.485 | 81.12 | 4.676 | 1.341 | 5.76% | 3.231 | 8.25% |
| 022.43 | Copper, ICP, Microwave (ppm) | 20 | 19 | 80.45 | 3.995 | 80.29 | 3.376 | 0.9682 | 4.21% | 2.508 | 8.27% |
| 022.41 | Copper, ICP, Dry ash (ppm) | 18 | 18 | 70.85 | 5.319 | 70.85 | 6.032 | 1.777 | 8.51% | 3.928 | 8.42% |
| 022.31 | Copper, AAS, Dry ash (ppm) | 14 | 14 | 72.94 | 6.296 | 72.96 | 6.835 | 2.284 | 9.37% | 1.959 | 8.39% |
| 022.53 | Copper, ICP-MS, Microwave (ppm) | 4 | 4 | 80.07 | 4.706 | 80.07 | 4.706 | 2.353 | 5.88% | 3.595 | 8.27% |
| 022.52 | Copper, ICP-MS, Open vessel (ppm) | 3 | 3 | 79.23 | 4.505 | 79.23 | 4.505 | 2.601 | 5.69% | 9.885 | 8.28% |
| 022.99 | Copper, Miscellaneous (ppm) | 3 | 3 | 69.85 | 7.981 | 69.85 | 7.981 | 5.643 | 11.43% | 4.500 | 8.44% |
| 022.33 | Copper, AAS, Microwave (ppm) | 2 | 2 | 76.52 | 10.51 | | | | | | |
| 022.44 | Copper, ICP, Dry ash (ppm) | 2 | 2 | 73.51 | 4.967 | | | | | | |
| 025.41 | Iron, ICP, Dry ash (ppm) | 19 | 18 | 455.8 | 31.46 | 458.3 | 24.03 | 7.081 | 5.24% | 12.27 | 6.36% |
| 025.43 | Iron, ICP, Microwave (ppm) | 16 | 16 | 487.2 | 44.01 | 482.3 | 37.05 | 11.58 | 7.68% | 14.53 | 6.31% |
| 025.42 | Iron, ICP, Open vessel (ppm) | 16 | 15 | 366.4 | 128.0 | 381.0 | 111.2 | 35.87 | 29.17% | 17.97 | 6.54% |
| 025.31 | Iron, AAS, Dry ash (ppm) | 14 | 14 | 481.9 | 56.87 | 482.7 | 52.83 | 17.65 | 10.94% | 9.576 | 6.31% |
| 025.53 | Iron, ICP-MS, Microwave (ppm) | 3 | 3 | 425.4 | 76.67 | 425.4 | 76.67 | 44.27 | 18.02% | 6.497 | 6.43% |
| 025.99 | Iron, Miscellaneous (ppm) | 2 | 2 | 456.5 | 28.28 | | | | | | |

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|-------------|---|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 025.51 | Iron, ICP-MS, Dry ash (ppm) | 1 | 1 | 513.3 | | | | | | | |
| 025.52 | Iron, ICP-MS, Open vessel (ppm) | 1 | 1 | 468.9 | | | | | | | |
| 027.41 | Magnesium, ICP, Dry ash (%) | 18 | 18 | 0.2433 | 0.0114 | 0.2428 | 0.0113 | 0.0033 | 4.65% | 0.0080 | 4.95% |
| 027.42 | Magnesium, ICP, Open vessel (%) | 18 | 18 | 0.2420 | 0.0171 | 0.2407 | 0.0132 | 0.0039 | 5.49% | 0.0068 | 4.96% |
| 027.43 | Magnesium, ICP, Microwave (%) | 18 | 17 | 0.2462 | 0.0157 | 0.2457 | 0.0162 | 0.0049 | 6.60% | 0.0022 | 4.94% |
| 027.31 | Magnesium, AAS, Dry ash (%) | 10 | 9 | 0.2511 | 0.0108 | 0.2517 | 0.0109 | 0.0045 | 4.33% | 0.0036 | 4.92% |
| 027.52 | Magnesium, ICP-MS, Open vessel (%) | 4 | 4 | 0.2391 | 0.0107 | 0.2391 | 0.0107 | 0.0054 | 4.48% | 0.0157 | 4.96% |
| 027.53 | Magnesium, ICP-MS, Microwave (%) | 4 | 4 | 0.2478 | 0.0078 | 0.2478 | 0.0078 | 0.0039 | 3.16% | 0.0165 | 4.93% |
| 027.99 | Magnesium, Miscellaneous (%) | 3 | 3 | 0.3033 | 0.0884 | 0.3033 | 0.0884 | 0.0510 | 29.13% | 0.0067 | 4.79% |
| 027.32 | Magnesium, AAS, Open vessel (%) | 1 | 1 | 0.2450 | | | | | | | |
| 027.33 | Magnesium, AAS, Microwave (%) | 1 | 1 | 0.2325 | | | | | | | |
| 027.44 | Magnesium, ICP, Dry ash (%) | 1 | 1 | 0.2520 | | | | | | | |
| 027.51 | Magnesium, ICP-MS, Dry ash (%) | 1 | 1 | 0.2735 | | | | | | | |
| 028.43 | Manganese, ICP, Microwave (ppm) | 20 | 20 | 212.1 | 24.80 | 216.1 | 13.03 | 3.642 | 6.03% | 5.581 | 7.12% |
| 028.42 | Manganese, ICP, Open vessel (ppm) | 19 | 19 | 214.7 | 15.60 | 214.7 | 17.68 | 5.071 | 8.24% | 6.201 | 7.13% |
| 028.41 | Manganese, ICP, Dry ash (ppm) | 17 | 17 | 205.7 | 16.23 | 208.4 | 11.30 | 3.426 | 5.42% | 7.855 | 7.16% |
| 028.31 | Manganese, AAS, Dry ash (ppm) | 14 | 14 | 213.0 | 23.24 | 214.3 | 8.050 | 2.689 | 3.76% | 4.032 | 7.13% |
| 028.53 | Manganese, ICP-MS, Microwave (ppm) | 4 | 4 | 186.6 | 38.10 | 186.6 | 38.10 | 19.05 | 20.43% | 9.015 | 7.28% |
| 028.52 | Manganese, ICP-MS, Open vessel (ppm) | 3 | 3 | 219.3 | 6.660 | 219.3 | 6.660 | 3.845 | 3.04% | 11.07 | 7.11% |
| 028.99 | Manganese, Miscellaneous (ppm) | 3 | 3 | 213.7 | 10.60 | 213.7 | 10.60 | 6.119 | 4.96% | 8.667 | 7.14% |
| 028.44 | Manganese, ICP, Dry ash (ppm) | 2 | 2 | 192.4 | 27.76 | | | | | | |
| 028.33 | Manganese, AAS, Microwave (ppm) | 1 | 1 | 196.9 | | | | | | | |
| 028.51 | Manganese, ICP-MS, Dry ash (ppm) | 1 | 1 | 227.7 | | | | | | | |
| 031.01 | Phosphorus, Photometric (%) | 31 | 30 | 0.6753 | 0.0305 | 0.6780 | 0.0233 | 0.0053 | 3.43% | 0.0188 | 4.24% |
| 031.41 | Phosphorus, ICP, Dry ash (%) | 22 | 22 | 0.6888 | 0.0590 | 0.6842 | 0.0417 | 0.0111 | 6.10% | 0.0155 | 4.23% |
| 031.43 | Phosphorus, ICP, Microwave (%) | 23 | 22 | 0.7032 | 0.0842 | 0.6919 | 0.0398 | 0.0106 | 5.75% | 0.0119 | 4.23% |
| 031.42 | Phosphorus, ICP, Open vessel (%) | 18 | 17 | 0.6529 | 0.0367 | 0.6552 | 0.0359 | 0.0109 | 5.49% | 0.0147 | 4.26% |
| 031.53 | Phosphorus, ICP-MS, Microwave (%) | 4 | 4 | 0.6475 | 0.0359 | 0.6475 | 0.0359 | 0.0179 | 5.54% | 0.0170 | 4.27% |
| 031.03 | Phosphorus, Autoanalyzer (%) | 3 | 3 | 0.6782 | 0.0118 | 0.6782 | 0.0118 | 0.0068 | 1.74% | 0.0085 | 4.24% |
| 031.52 | Phosphorus, ICP-MS, Open vessel (%) | 3 | 3 | 0.6056 | 0.0337 | 0.6056 | 0.0337 | 0.0195 | 5.56% | 0.0480 | 4.31% |
| 031.99 | Phosphorus, Miscellaneous (%) | 3 | 3 | 0.6400 | 0.0150 | 0.6400 | 0.0150 | 0.0106 | 2.34% | 0.0667 | 4.28% |
| 031.02 | Phosphorus, GQMP (AOAC 935.13-Extraction) (%) | 2 | 2 | 0.7000 | 0.0141 | | | | | | |
| 031.44 | Phosphorus, ICP, Dry ash (%) | 2 | 2 | 0.7013 | 0.0421 | | | | | | |
| 031.06 | Phosphorus, Hach Method (%) | 1 | 1 | 0.6900 | | | | | | | |
| 032.41 | Potassium, ICP, Dry ash (%) | 20 | 19 | 1.090 | 0.0567 | 1.087 | 0.0565 | 0.0162 | 5.20% | 0.0146 | 3.95% |
| 032.42 | Potassium, ICP, Open vessel (%) | 17 | 17 | 1.107 | 0.0441 | 1.107 | 0.0500 | 0.0152 | 4.51% | 0.0449 | 3.94% |
| 032.43 | Potassium, ICP, Microwave (%) | 18 | 17 | 1.089 | 0.0746 | 1.097 | 0.0538 | 0.0163 | 4.91% | 0.0088 | 3.94% |
| 032.31 | Potassium, AAS, Dry ash (%) | 9 | 9 | 1.072 | 0.0719 | 1.075 | 0.0765 | 0.0319 | 7.12% | 0.0375 | 3.96% |
| 032.53 | Potassium, ICP-MS, Microwave (%) | 4 | 4 | 1.096 | 0.0320 | 1.096 | 0.0320 | 0.0160 | 2.92% | 0.0175 | 3.94% |
| 032.52 | Potassium, ICP-MS, Open vessel (%) | 3 | 3 | 1.013 | 0.0760 | 1.013 | 0.0760 | 0.0537 | 7.50% | 0.0524 | 3.99% |

| 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 |
|-------------|---|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 032.99 | Potassium, Miscellaneous (%) | 3 | 3 | 1.055 | 0.0794 | 1.055 | 0.0794 | 0.0458 | 7.52% | 0.0500 | 3.97% |
| 032.02 | Potassium, Flame Emission (%) | 1 | 1 | 1.120 | | | | | | | |
| 032.32 | Potassium, AAS, Open vessel (%) | 1 | 1 | 1.085 | | | | | | | |
| 032.44 | Potassium, ICP, Dry ash (%) | 1 | 1 | 1.095 | | | | | | | |
| 033.01 | Salt as chloride, Poten Cl (%) | 24 | 22 | 1.535 | 0.0292 | 1.532 | 0.0259 | 0.0069 | 1.69% | 0.0151 | 3.75% |
| 033.00 | Salt as chloride, Sol Cl (%) | 18 | 17 | 1.439 | 0.1687 | 1.478 | 0.0674 | 0.0204 | 4.56% | 0.0164 | 3.77% |
| 033.99 | Salt, Miscellaneous (%) | 8 | 7 | 1.301 | 0.2742 | 1.301 | 0.3110 | 0.1469 | 23.90% | 0.0171 | 3.84% |
| 033.03 | Salt as chloride, Quantab (%) | 5 | 4 | 1.380 | 0.1236 | 1.380 | 0.1236 | 0.0618 | 8.95% | 0.0150 | 3.81% |
| 033.05 | Salt as chloride, Ion Sel Electrode (%) | 2 | 2 | 1.443 | 0.1025 | | | | | | |
| 034.53 | Selenium, ICP-MS, Microwave (ppm) | 9 | 9 | 3.007 | 1.070 | 2.743 | 0.4255 | 0.1773 | 15.51% | 0.1783 | 13.74% |
| 034.43 | Selenium, ICP, Microwave (ppm) | 5 | 5 | 3.361 | 0.6787 | 3.361 | 0.6787 | 0.3035 | 20.19% | 0.1170 | 13.33% |
| 034.52 | Selenium, ICP-MS, Open vessel (ppm) | 4 | 4 | 2.630 | 0.2570 | 2.630 | 0.2570 | 0.1285 | 9.77% | 0.0803 | 13.83% |
| 034.04 | Selenium, AA, Hydride (ppm) | 3 | 3 | 2.451 | 0.3784 | 2.451 | 0.3784 | 0.2675 | 15.43% | 0.2780 | 13.98% |
| 034.99 | Selenium, Miscellaneous (ppm) | 2 | 2 | 2.008 | 2.061 | | | | | | |
| 034.01 | Selenium, Fluor (ppm) | 1 | 1 | 2.555 | | | | | | | |
| 034.41 | Selenium, ICP, Dry ash (ppm) | 1 | 1 | 2.165 | | | | | | | |
| 034.42 | Selenium, ICP, Open vessel (ppm) | 2 | 1 | 4.000 | | | | | | | |
| 035.41 | Sodium, ICP, Dry ash (%) | 21 | 21 | 0.2964 | 0.0259 | 0.2918 | 0.0170 | 0.0046 | 5.82% | 0.0072 | 4.81% |
| 035.43 | Sodium, ICP, Microwave (%) | 19 | 18 | 0.2861 | 0.0350 | 0.2922 | 0.0164 | 0.0048 | 5.63% | 0.0031 | 4.81% |
| 035.42 | Sodium, ICP, Open vessel (%) | 17 | 17 | 0.2951 | 0.0205 | 0.2954 | 0.0198 | 0.0060 | 6.69% | 0.0096 | 4.81% |
| 035.31 | Sodium, AAS, Dry ash (%) | 12 | 12 | 0.2796 | 0.0191 | 0.2815 | 0.0170 | 0.0061 | 6.05% | 0.0112 | 4.84% |
| 035.52 | Sodium, ICP-MS, Open vessel (%) | 4 | 4 | 0.2914 | 0.0205 | 0.2914 | 0.0205 | 0.0102 | 7.02% | 0.0195 | 4.82% |
| 035.53 | Sodium, ICP-MS, Microwave (%) | 4 | 4 | 0.2853 | 0.0155 | 0.2853 | 0.0155 | 0.0078 | 5.44% | 0.0060 | 4.83% |
| 035.99 | Sodium, Miscellaneous (%) | 4 | 3 | 0.3000 | 0.0132 | 0.3000 | 0.0132 | 0.0076 | 4.41% | 0.0200 | 4.79% |
| 035.01 | Sodium, Ion-selective electrode (%) | 1 | 1 | 0.2865 | | | | | | | |
| 035.02 | Sodium, Em Spect (%) | 1 | 1 | 0.2800 | | | | | | | |
| 035.32 | Sodium, AAS, Open vessel (%) | 1 | 1 | 0.3150 | | | | | | | |
| 036.42 | Sulfur, ICP, Open vessel (%) | 20 | 19 | 0.3355 | 0.0207 | 0.3350 | 0.0211 | 0.0060 | 6.29% | 0.0084 | 4.72% |
| 036.43 | Sulfur, ICP, Microwave (%) | 14 | 14 | 0.3447 | 0.0174 | 0.3439 | 0.0177 | 0.0059 | 5.14% | 0.0069 | 4.70% |
| 036.04 | Sulfur, LECO (%) | 4 | 4 | 0.3275 | 0.0189 | 0.3275 | 0.0189 | 0.0095 | 5.78% | 0.0145 | 4.73% |
| 036.52 | Sulfur, ICP-MS, Open vessel (%) | 3 | 3 | 0.3434 | 0.0063 | 0.3434 | 0.0063 | 0.0036 | 1.83% | 0.0210 | 4.70% |
| 036.53 | Sulfur, ICP-MS, Microwave (%) | 1 | 1 | 0.3340 | | | | | | | |
| 036.99 | Sulfur, Miscellaneous (%) | 1 | 1 | 0.2750 | | | | | | | |
| 037.43 | Zinc, ICP, Microwave (ppm) | 21 | 21 | 452.7 | 58.74 | 459.9 | 34.76 | 9.480 | 7.56% | 15.65 | 6.36% |
| 037.42 | Zinc, ICP, Open vessel (ppm) | 18 | 18 | 443.2 | 41.33 | 440.2 | 36.58 | 10.78 | 8.31% | 18.05 | 6.40% |
| 037.41 | Zinc, ICP, Dry ash (ppm) | 18 | 17 | 440.0 | 23.01 | 440.4 | 21.52 | 6.523 | 4.89% | 8.995 | 6.40% |
| 037.31 | Zinc, AAS, Dry ash (ppm) | 14 | 14 | 480.8 | 127.5 | 449.5 | 31.35 | 10.47 | 6.97% | 14.56 | 6.38% |
| 037.33 | Zinc, AAS, Microwave (ppm) | 3 | 3 | 454.9 | 48.43 | 454.9 | 48.43 | 27.96 | 10.65% | 4.992 | 6.37% |
| 037.52 | Zinc, ICP-MS, Open vessel (ppm) | 3 | 3 | 457.4 | 21.10 | 457.4 | 21.10 | 12.18 | 4.61% | 27.59 | 6.36% |
| 037.53 | Zinc, ICP-MS, Microwave (ppm) | 4 | 3 | 438.5 | 39.58 | 438.5 | 39.58 | 22.85 | 9.03% | 10.25 | 6.40% |

| 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 |
|-------------|---|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 037.99 | Zinc, Miscellaneous (ppm) | 3 | 3 | 469.0 | 39.13 | 469.0 | 39.13 | 22.59 | 8.34% | 20.00 | 6.34% |
| 037.44 | Zinc, ICP, Dry ash (ppm) | 2 | 2 | 449.2 | 8.800 | | | | | | |
| 037.51 | Zinc, ICP-MS, Dry ash (ppm) | 1 | 1 | 435.2 | | | | | | | |
| 038.43 | Molybdenum, ICP, Microwave (ppm) | 8 | 8 | 3.003 | 0.3260 | 3.003 | 0.3696 | 0.1634 | 12.31% | 0.1897 | 13.56% |
| 038.42 | Molybdenum, ICP, Open vessel (ppm) | 5 | 4 | 3.248 | 0.7387 | 3.248 | 0.7387 | 0.3693 | 22.74% | 0.1443 | 13.40% |
| 038.53 | Molybdenum, ICP-MS, Microwave (ppm) | 4 | 4 | 3.132 | 0.1189 | 3.132 | 0.1189 | 0.0595 | 3.80% | 0.1081 | 13.47% |
| 038.41 | Molybdenum, ICP, Dry ash (ppm) | 3 | 3 | 2.566 | 0.3001 | 2.566 | 0.3001 | 0.1733 | 11.69% | 0.0275 | 13.88% |
| 038.52 | Molybdenum, ICP-MS, Open vessel (ppm) | 3 | 3 | 3.048 | 0.1567 | 3.048 | 0.1567 | 0.0905 | 5.14% | 0.0837 | 13.53% |
| 040.52 | Barium, ICP-MS, Open vessel (ppm) | 2 | 2 | 4.320 | 0.1485 | | | | | | |
| 040.53 | Barium, ICP-MS, Microwave (ppm) | 1 | 1 | 4.450 | | | | | | | |
| 041.53 | Vanadium, ICP-MS, Microwave (ppm) | 1 | 1 | 2.035 | | | | | | | |
| 042.99 | Chloride, Miscellaneous (%) | 2 | 2 | 0.9973 | 0.0456 | | | | | | |
| 042.00 | Chloride, Titrimetric (%) | 1 | 1 | 0.9260 | | | | | | | |
| 101.99 | Choline Chloride, Miscellaneous (ppm) | 1 | 1 | 1,545 | | | | | | | |
| 102.01 | Niacin, Microbiological (ppm) | 1 | 1 | 34.15 | | | | | | | |
| 103.01 | Pantothenic Acid, Microbiological (ppm) | 1 | 1 | 11.90 | | | | | | | |
| 104.00 | Riboflavin, Fluorometric (ppm) | 1 | 1 | 6.500 | | | | | | | |
| 104.03 | Riboflavin, LC (ppm) | 1 | 1 | 2.060 | | | | | | | |
| 105.00 | Thiamine, LC (ppm) | 1 | 1 | 67.30 | | | | | | | |
| 105.01 | Thiamine, Fluorometer (ppm) | 1 | 1 | 58.85 | | | | | | | |
| 106.02 | Vitamin A, LC (KU / kg) | 12 | 12 | 30.18 | 7.726 | 30.02 | 8.423 | 3.040 | 28.06% | 3.402 | |
| 106.00 | Vitamin A, Color (KU / kg) | 2 | 2 | 34.12 | 6.464 | | | | | | |
| 106.01 | Vitamin A, UV (KU / kg) | 1 | 1 | 26.50 | | | | | | | |
| 107.00 | Vitamin B12, Microbiological (ppb) | 1 | 1 | 11.90 | | | | | | | |
| 108.02 | Vitamin D3, LC (KU / kg) | 5 | 4 | 3.388 | 0.4233 | 3.388 | 0.4233 | 0.2116 | 12.50% | 0.2400 | |
| 109.02 | Vitamin E, LC (IU / kg) | 14 | 14 | 111.2 | 25.42 | 111.5 | 25.07 | 8.377 | 22.49% | 3.749 | |
| 109.99 | Vitamin E, Miscellaneous (IU / kg) | 2 | 2 | 117.8 | 1.768 | | | | | | |
| 111.00 | Vitamin C, Phosphorylated, LC (ppm) | 1 | 1 | 4.400 | | | | | | | |
| 112.01 | Pyridoxine, LC (µg / g) | 1 | 1 | 2.760 | | | | | | | |
| 113.01 | Folic Acid, Micro (ppm) | 1 | 1 | 1.360 | | | | | | | |
| 114.01 | Biotin, Microbiological (ppm) | 1 | 1 | 1.225 | | | | | | | |
| 115.00 | Non Protein N (NPN), Urea + Am, Urease method (%) | 1 | 1 | 1.140 | | | | | | | |
| 118.99 | Peroxide value, Miscellaneous (meq/kg) | 1 | 1 | 2.630 | | | | | | | |
| 120.00 | Alanine, Post-col Ninhydrin Der (%) | 18 | 18 | 0.7686 | 0.0290 | 0.7713 | 0.0265 | 0.0078 | 3.44% | 0.0135 | 4.16% |
| 120.05 | Alanine, Pre-col AQC Der (%) | 6 | 6 | 0.8036 | 0.0997 | 0.7850 | 0.0665 | 0.0339 | 8.47% | 0.0072 | 4.15% |
| 120.99 | Alanine, Miscellaneous (%) | 2 | 2 | 0.7625 | 0.0106 | | | | | | |
| 120.02 | Alanine, Post-col OPA Der (%) | 1 | 1 | 0.7780 | | | | | | | |
| 121.00 | Arginine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.9768 | 0.0447 | 0.9783 | 0.0471 | 0.0143 | 4.82% | 0.0238 | 4.01% |
| 121.05 | Arginine, Pre-col AQC Der (%) | 6 | 6 | 0.9972 | 0.0485 | 0.9972 | 0.0549 | 0.0280 | 5.51% | 0.0160 | 4.00% |
| 121.99 | Arginine, Miscellaneous (%) | 2 | 2 | 0.9275 | 0.0106 | | | | | | |

| 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 |
|-------------|--|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 121.02 | Arginine, Post-col OPA Der (%) | 1 | 1 | 0.9820 | | | | | | | |
| 122.00 | Aspartic, Post-col Ninhydrin Der (%) | 18 | 18 | 1.618 | 0.0662 | 1.629 | 0.0483 | 0.0142 | 2.96% | 0.0337 | 3.72% |
| 122.05 | Aspartic, Pre-col AQC Der (%) | 6 | 6 | 1.592 | 0.0468 | 1.592 | 0.0530 | 0.0271 | 3.33% | 0.0288 | 3.73% |
| 122.99 | Aspartic, Miscellaneous (%) | 2 | 2 | 1.495 | 0.1980 | | | | | | |
| 122.02 | Aspartic, Post-col OPA Der (%) | 1 | 1 | 1.657 | | | | | | | |
| 124.00 | Cysteine/Cystine, PAO Post-col Ninhydrin (%) | 17 | 16 | 0.2795 | 0.0444 | 0.2738 | 0.0338 | 0.0106 | 12.34% | 0.0075 | 4.86% |
| 124.05 | Cysteine/Cystine, PAO Pre-col AQC Der (%) | 6 | 4 | 0.2715 | 0.0229 | 0.2715 | 0.0229 | 0.0163 | 8.43% | 0.0015 | 4.87% |
| 124.99 | Cysteine/Cystine, Miscellaneous (%) | 2 | 2 | 0.2475 | 0.0389 | | | | | | |
| 124.02 | Cysteine/Cystine, PAO Post-col OPA Der (%) | 1 | 1 | 0.2795 | | | | | | | |
| 125.00 | Glutamic, Post-col Ninhydrin Der (%) | 18 | 18 | 2.850 | 0.1341 | 2.857 | 0.1256 | 0.0370 | 4.40% | 0.0510 | 3.42% |
| 125.05 | Glutamic, Pre-col AQC Der (%) | 6 | 6 | 2.806 | 0.1767 | 2.806 | 0.2003 | 0.1022 | 7.14% | 0.0558 | 3.42% |
| 125.99 | Glutamic, Miscellaneous (%) | 2 | 2 | 2.508 | 0.3924 | | | | | | |
| 125.02 | Glutamic, Post-col OPA Der (%) | 1 | 1 | 2.889 | | | | | | | |
| 126.00 | Glycine, Post-col Ninhydrin Der (%) | 18 | 18 | 0.6909 | 0.0256 | 0.6921 | 0.0258 | 0.0076 | 3.73% | 0.0111 | 4.23% |
| 126.05 | Glycine, Pre-col AQC Der (%) | 6 | 5 | 0.7273 | 0.0437 | 0.7273 | 0.0437 | 0.0062 | 6.01% | 0.0030 | 4.20% |
| 126.99 | Glycine, Miscellaneous (%) | 2 | 2 | 0.5400 | 0.2121 | | | | | | |
| 126.02 | Glycine, Post-col OPA Der (%) | 1 | 1 | 0.7085 | | | | | | | |
| 127.00 | Histidine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.3850 | 0.0188 | 0.3858 | 0.0174 | 0.0053 | 4.51% | 0.0066 | 4.62% |
| 127.05 | Histidine, Pre-col AQC Der (%) | 6 | 6 | 0.4051 | 0.0378 | 0.4032 | 0.0384 | 0.0196 | 9.53% | 0.0152 | 4.59% |
| 127.99 | Histidine, Miscellaneous (%) | 2 | 2 | 0.3850 | 0.0071 | | | | | | |
| 127.02 | Histidine, Post-col OPA Der (%) | 1 | 1 | 0.3890 | | | | | | | |
| 128.00 | Isoleucine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.6323 | 0.0487 | 0.6311 | 0.0479 | 0.0145 | 7.59% | 0.0140 | 4.29% |
| 128.05 | Isoleucine, Pre-col AQC Der (%) | 6 | 6 | 0.6732 | 0.0596 | 0.6732 | 0.0675 | 0.0345 | 10.03% | 0.0160 | 4.25% |
| 128.99 | Isoleucine, Miscellaneous (%) | 2 | 2 | 0.5188 | 0.1432 | | | | | | |
| 128.02 | Isoleucine, Post-col OPA Der (%) | 1 | 1 | 0.6425 | | | | | | | |
| 129.00 | Leucine, Post-col Ninhydrin Der (%) | 18 | 18 | 1.229 | 0.0545 | 1.235 | 0.0459 | 0.0135 | 3.72% | 0.0192 | 3.87% |
| 129.05 | Leucine, Pre-col AQC Der (%) | 6 | 5 | 1.289 | 0.1104 | 1.289 | 0.1104 | 0.0627 | 8.56% | 0.0026 | 3.85% |
| 129.99 | Leucine, Miscellaneous (%) | 2 | 2 | 1.263 | 0.0460 | | | | | | |
| 129.02 | Leucine, Post-col OPA Der (%) | 1 | 1 | 1.258 | | | | | | | |
| 130.00 | L-Lysine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.8216 | 0.0394 | 0.8266 | 0.0325 | 0.0099 | 3.93% | 0.0191 | 4.12% |
| 130.05 | L-Lysine, Pre-col AQC Der (%) | 6 | 6 | 0.8058 | 0.0406 | 0.8058 | 0.0460 | 0.0235 | 5.71% | 0.0178 | 4.13% |
| 130.99 | L-Lysine, Miscellaneous (%) | 2 | 2 | 0.6788 | 0.2846 | | | | | | |
| 130.02 | L-Lysine, Post-col OPA Der (%) | 1 | 1 | 0.8690 | | | | | | | |
| 131.00 | Methionine, PAO Post-col Ninhydrin Der (%) | 17 | 16 | 0.2415 | 0.0322 | 0.2431 | 0.0191 | 0.0060 | 7.86% | 0.0057 | 4.95% |
| 131.05 | Methionine, PAO Pre-col AQC Der (%) | 6 | 6 | 0.2363 | 0.0164 | 0.2363 | 0.0186 | 0.0095 | 7.86% | 0.0073 | 4.97% |
| 131.99 | Methionine, Miscellaneous (%) | 3 | 3 | 0.2400 | 0.0200 | 0.2400 | 0.0200 | 0.0115 | 8.33% | 0.0087 | 4.96% |
| 131.02 | Methionine, PAO Post-col OPA Der (%) | 1 | 1 | 0.2345 | | | | | | | |
| 132.00 | Phenylalanine, Post-col Ninhydrin Der (%) | 18 | 18 | 0.7428 | 0.0617 | 0.7543 | 0.0365 | 0.0108 | 4.84% | 0.0154 | 4.17% |
| 132.05 | Phenylalanine, Pre-col AQC Der (%) | 6 | 6 | 0.7930 | 0.0657 | 0.7930 | 0.0745 | 0.0380 | 9.39% | 0.0030 | 4.14% |
| 132.99 | Phenylalanine, Miscellaneous (%) | 2 | 2 | 0.7113 | 0.0477 | | | | | | |

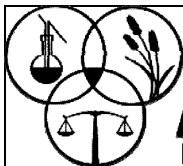
| Method Code | Analyte and Method | Total # Labs Submitting | # Labs in Robust Calcs | Raw Mean | Raw SD | Assigned Value Robust Mean | AAFCO ffp Robust SD | Uncertainty (U) Robust | % RSD - Robust | Average Range (R-bar) | Thompson Horwitz %RSD |
|-------------|---|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 132.02 | Phenylalanine, Post-col OPA Der (%) | 1 | 1 | 0.7695 | | | | | | | |
| 133.00 | Proline, Post-col Ninhydrin Der (%) | 18 | 17 | 0.9579 | 0.0961 | 0.9421 | 0.0630 | 0.0191 | 6.69% | 0.0222 | 4.04% |
| 133.05 | Proline, Pre-col AQC Der (%) | 6 | 6 | 0.9997 | 0.0923 | 0.9775 | 0.0475 | 0.0243 | 4.86% | 0.0223 | 4.01% |
| 133.99 | Proline, Miscellaneous (%) | 2 | 2 | 0.9713 | 0.0548 | | | | | | |
| 134.00 | Serine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.7657 | 0.0450 | 0.7686 | 0.0349 | 0.0106 | 4.54% | 0.0111 | 4.16% |
| 134.05 | Serine, Pre-col AQC Der (%) | 6 | 5 | 0.7569 | 0.0391 | 0.7569 | 0.0391 | 0.0212 | 5.17% | 0.0090 | 4.17% |
| 134.99 | Serine, Miscellaneous (%) | 2 | 2 | 0.7388 | 0.0371 | | | | | | |
| 134.02 | Serine, Post-col OPA Der (%) | 1 | 1 | 0.6925 | | | | | | | |
| 135.00 | Threonine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.6050 | 0.0337 | 0.6088 | 0.0159 | 0.0048 | 2.61% | 0.0096 | 4.31% |
| 135.05 | Threonine, Pre-col AQC Der (%) | 6 | 5 | 0.6066 | 0.0363 | 0.6066 | 0.0363 | 0.0203 | 5.99% | 0.0044 | 4.31% |
| 135.99 | Threonine, Miscellaneous (%) | 2 | 2 | 0.5538 | 0.0725 | | | | | | |
| 135.02 | Threonine, Post-col OPA Der (%) | 1 | 1 | 0.6080 | | | | | | | |
| 136.00 | Tryptophan, Alka-Hydrol Post-col Ninhyd (%) | 6 | 6 | 0.2011 | 0.0290 | 0.2011 | 0.0328 | 0.0168 | 16.33% | 0.0060 | 5.09% |
| 136.03 | Tryptophan, Alka-Hydrol + IS RP LC FI (%) | 5 | 5 | 0.2039 | 0.0071 | 0.2039 | 0.0071 | 0.0032 | 3.48% | 0.0043 | 5.08% |
| 136.01 | Tryptophan, Alka-Hydrol Rev Phase LC UV (%) | 3 | 3 | 0.1895 | 0.0230 | 0.1895 | 0.0230 | 0.0133 | 12.12% | 0.0057 | 5.14% |
| 136.02 | Tryptophan, Alka-Hydrol Post-col OPA De (%) | 1 | 1 | 0.1960 | | | | | | | |
| 136.05 | Tryptophan, Pre-col AQC Der (%) | 1 | 1 | 0.2675 | | | | | | | |
| 136.99 | Tryptophan, Miscellaneous (%) | 1 | 1 | 0.4425 | | | | | | | |
| 137.00 | Tyrosine, Post-col Ninhydrin Der (%) | 13 | 12 | 0.5101 | 0.0732 | 0.5115 | 0.0799 | 0.0288 | 15.63% | 0.0075 | 4.42% |
| 137.05 | Tyrosine, Pre-col AQC Der (%) | 6 | 5 | 0.5782 | 0.0934 | 0.5782 | 0.0934 | 0.0522 | 16.16% | 0.0324 | 4.34% |
| 137.99 | Tyrosine, Miscellaneous (%) | 2 | 2 | 0.4488 | 0.0088 | | | | | | |
| 137.02 | Tyrosine, Post-col OPA Der (%) | 1 | 1 | 0.5065 | | | | | | | |
| 138.00 | Valine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.7466 | 0.0422 | 0.7457 | 0.0437 | 0.0132 | 5.85% | 0.0120 | 4.18% |
| 138.05 | Valine, Pre-col AQC Der (%) | 6 | 6 | 0.7798 | 0.0519 | 0.7798 | 0.0588 | 0.0300 | 7.54% | 0.0192 | 4.15% |
| 138.99 | Valine, Miscellaneous (%) | 2 | 2 | 0.7125 | 0.0601 | | | | | | |
| 138.02 | Valine, Post-col OPA Der (%) | 1 | 1 | 0.7730 | | | | | | | |
| 139.00 | Taurine, Post-col Ninhydrin Der (%) | 1 | 1 | 0.0840 | | | | | | | |
| 139.05 | Taurine, Pre-col AQC Der (%) | 1 | 1 | 0.0035 | | | | | | | |
| 139.02 | Taurine, Post-col OPA Der (%) | 1 | 1 | 0.0100 | | | | | | | |
| 139.99 | Taurine, Miscellaneous (%) | 1 | 1 | 0.0100 | | | | | | | |
| 160.10 | Fructose, HPAEC PAD (%) | 1 | 1 | 0.4205 | | | | | | | |
| 160.99 | Fructose, Miscellaneous (%) | 1 | 1 | 0.6800 | | | | | | | |
| 161.10 | Galactose, HPAEC PAD (%) | 1 | 1 | 0.0000 | | | | | | | |
| 162.10 | Glucose, HPAEC PAD (%) | 1 | 1 | 0.2910 | | | | | | | |
| 162.99 | Glucose, Miscellaneous (%) | 1 | 1 | 0.3850 | | | | | | | |
| 163.10 | Lactose, HPAEC PAD (%) | 1 | 1 | 0.4405 | | | | | | | |
| 163.99 | Lactose, Miscellaneous (%) | 1 | 1 | 0.5200 | | | | | | | |
| 164.10 | Maltose, HPAEC PAD (%) | 1 | 1 | 0.0565 | | | | | | | |
| 164.99 | Maltose, Miscellaneous (%) | 1 | 1 | 0.1500 | | | | | | | |
| 165.10 | Sucrose, HPAEC PAD (%) | 1 | 1 | 3.406 | | | | | | | |

| 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 |
|-------------|--|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 165.99 | Sucrose, Miscellaneous (%) | 1 | 1 | 3.625 | | | | | | | |
| 166.10 | Raffinose, HPAEC PAD (%) | 1 | 1 | 0.3040 | | | | | | | |
| 166.99 | Raffinose, Miscellaneous (%) | 1 | 1 | 0.2750 | | | | | | | |
| 167.10 | Stachyose, HPAEC PAD (%) | 1 | 1 | 1.122 | | | | | | | |
| 167.99 | Stachyose, Miscellaneous (%) | 1 | 1 | 0.9850 | | | | | | | |
| 350.03 | Carbadox, LC-MS/MS (ppm) | 2 | 2 | 0.6029 | 0.0677 | | | | | | |
| 351.05 | Chlortetracycline, LC-MS/MS (ppm) | 4 | 4 | 2.261 | 1.733 | 2.261 | 1.733 | 0.8666 | 76.67% | 0.1093 | 14.15% |
| 354.01 | Decoquinatone, LC (UV or FL) (ppm) | 8 | 8 | 52.07 | 10.41 | 49.70 | 5.229 | 2.311 | 10.52% | 1.712 | 8.89% |
| 354.04 | Decoquinatone, LC-MS/MS (ppm) | 3 | 3 | 45.74 | 7.344 | 45.74 | 7.344 | 4.240 | 16.06% | 0.4293 | 9.00% |
| 354.02 | Decoquinatone, LC (ppm) | 2 | 2 | 49.23 | 0.3182 | | | | | | |
| 361.05 | Lasalocid Sodium, LC-MS/MS (ppm) | 1 | 1 | 0.3950 | | | | | | | |
| 365.05 | Monensin, LC-MS/MS (ppm) | 7 | 7 | 20.75 | 2.826 | 20.75 | 3.204 | 1.514 | 15.44% | 0.6583 | 10.13% |
| 365.03 | Monensin, LC-PCD (ppm) | 5 | 5 | 20.29 | 1.024 | 20.29 | 1.024 | 0.4579 | 5.05% | 1.440 | 10.17% |
| 365.02 | Monensin, LC (ppm) | 2 | 2 | 22.07 | 0.9440 | | | | | | |
| 365.99 | Monensin, Miscellaneous (ppm) | 2 | 2 | 20.63 | 2.935 | | | | | | |
| 365.04 | Monensin, LC-MS (ppm) | 1 | 1 | 20.45 | | | | | | | |
| 382.04 | Sulfamethazine, LC-MS/MS (ppm) | 4 | 3 | 0.2949 | 0.1358 | 0.2949 | 0.1358 | 0.0960 | 46.04% | 0.0023 | 19.22% |
| 386.02 | Tiamulin, LC-MS/MS (ppm) | 4 | 4 | 0.1502 | 0.0787 | 0.1502 | 0.0787 | 0.0393 | 52.36% | 0.0364 | 21.28% |
| 400.01 | Water Activity, Aqualab chilled mirror (Units) | 9 | 9 | 0.5574 | 0.0198 | 0.5556 | 0.0180 | 0.0075 | 3.24% | 0.0073 | |
| 400.99 | Water Activity, Miscellaneous (Units) | 4 | 3 | 0.5555 | 0.0205 | 0.5555 | 0.0205 | 0.0118 | 3.69% | 0.0023 | |
| 516.53 | Arsenic, Total, ICP-MS, Microwave (ppm) | 6 | 5 | 0.2903 | 0.0147 | 0.2903 | 0.0147 | 0.0082 | 5.05% | 0.0070 | 19.27% |
| 516.52 | Arsenic, Total, ICP-MS, Open vessel (ppm) | 3 | 3 | 0.2663 | 0.0013 | 0.2663 | 0.0013 | 0.0007 | 0.47% | 0.0193 | 19.52% |
| 516.00 | Arsenic, Total, AA, Hydride (ppm) | 2 | 2 | 0.2415 | 0.0226 | | | | | | |
| 516.43 | Arsenic, Total, ICP, Microwave (ppm) | 3 | 2 | 0.8640 | 0.8089 | 0.8640 | 0.8089 | | | 0.0710 | 16.35% |
| 516.99 | Arsenic, Total, Miscellaneous (ppm) | 1 | 1 | 0.0500 | | | | | | | |
| 518.53 | Cadmium, ICP-MS, Microwave (ppm) | 6 | 6 | 0.1115 | 0.0075 | 0.1115 | 0.0084 | 0.0043 | 7.58% | 0.0108 | 22.00% |
| 518.43 | Cadmium, ICP, Microwave (ppm) | 4 | 3 | 0.1184 | 0.0041 | 0.1184 | 0.0041 | 0.0029 | 3.44% | 0.0126 | 22.00% |
| 518.52 | Cadmium, ICP-MS, Open vessel (ppm) | 3 | 3 | 0.1062 | 0.0010 | 0.1062 | 0.0010 | 0.0006 | 0.98% | 0.0043 | 22.00% |
| 518.41 | Cadmium, ICP, Dry ash (ppm) | 2 | 2 | 0.0873 | 0.0103 | | | | | | |
| 518.99 | Cadmium, Miscellaneous (ppm) | 1 | 1 | 17.00 | | | | | | | |
| 520.53 | Chromium, ICP-MS, Microwave (ppm) | 4 | 4 | 5.045 | 0.8149 | 5.045 | 0.8149 | 0.4074 | 16.15% | 0.2092 | 12.54% |
| 520.42 | Chromium, ICP, Open vessel (ppm) | 3 | 3 | 5.660 | 0.8530 | 5.660 | 0.8530 | 0.4925 | 15.07% | 0.6850 | 12.32% |
| 520.43 | Chromium, ICP, Microwave (ppm) | 4 | 3 | 4.807 | 2.198 | 4.807 | 2.198 | 1.269 | 45.73% | 0.0167 | 12.63% |
| 520.41 | Chromium, ICP, Dry ash (ppm) | 2 | 2 | 2.547 | 0.5396 | | | | | | |
| 520.52 | Chromium, ICP-MS, Open vessel (ppm) | 2 | 2 | 3.230 | 1.006 | | | | | | |
| 526.53 | Lead, ICP-MS, Microwave (ppm) | 6 | 5 | 0.1755 | 0.0254 | 0.1755 | 0.0254 | 0.0142 | 14.46% | 0.0036 | 20.79% |
| 526.41 | Lead, ICP, Dry ash (ppm) | 2 | 2 | 0.1428 | 0.0238 | | | | | | |
| 526.43 | Lead, ICP, Microwave (ppm) | 3 | 2 | 0.2056 | 0.0221 | 0.2056 | 0.0221 | | | 0.0255 | 20.30% |
| 526.52 | Lead, ICP-MS, Open vessel (ppm) | 2 | 2 | 0.1700 | 0.0071 | | | | | | |
| 526.99 | Lead, Miscellaneous (ppm) | 1 | 1 | 2.550 | | | | | | | |

| 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 |
|-------------|---|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 529.99 | Mercury, Miscellaneous (ppb) | 6 | 3 | 2.206 | 0.7139 | 2.206 | 0.7139 | 0.5152 | 32.36% | 0.1410 | 22.00% |
| 539.43 | Nickel, ICP, Microwave (ppm) | 3 | 3 | 3.009 | 0.5317 | 3.009 | 0.5317 | 0.3760 | 17.67% | 0.0584 | 13.55% |
| 539.41 | Nickel, ICP, Dry ash (ppm) | 2 | 2 | 2.345 | 0.1418 | | | | | | |
| 539.52 | Nickel, ICP-MS, Open vessel (ppm) | 2 | 2 | 2.497 | 0.5491 | | | | | | |
| 539.53 | Nickel, ICP-MS, Microwave (ppm) | 2 | 2 | 3.171 | 0.2249 | | | | | | |
| 710.99 | Lauric Acid (12:0), Miscellaneous (% (w/w)) | 3 | 1 | | | | | | | | |
| 714.02 | Myristic Acid (14:0), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.0179 | | | | | | | |
| 714.99 | Myristic Acid (14:0), Miscellaneous (% (w/w)) | 2 | 1 | 0.0085 | | | | | | | |
| 716.99 | Palmitic Acid (16:0), Miscellaneous (% (w/w)) | 2 | 2 | 0.7400 | 0.0141 | | | | | | |
| 716.02 | Palmitic Acid (16:0), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.6970 | | | | | | | |
| 718.99 | Palmitoleic Acid (9c-16:1), Miscellaneous (% (w/w)) | 2 | 2 | 0.0108 | 0.0011 | | | | | | |
| 718.02 | Palmitoleic Acid (9c-16:1), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.0090 | | | | | | | |
| 720.02 | Margaric acid (17:0), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.0080 | | | | | | | |
| 722.99 | Stearic Acid (18:0), Miscellaneous (% (w/w)) | 2 | 2 | 0.1675 | 0.0035 | | | | | | |
| 722.02 | Stearic Acid (18:0), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.1714 | | | | | | | |
| 724.99 | Oleic Acid (9c-18:1), Miscellaneous (% (w/w)) | 2 | 2 | 1.041 | 0.0226 | | | | | | |
| 724.02 | Oleic Acid (9c-18:1), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 1.101 | | | | | | | |
| 726.99 | Linoleic Acid (9c,12c-18:2), Miscellaneous (% (w/w)) | 3 | 3 | 2.460 | 0.2930 | 2.460 | 0.2930 | 0.1692 | 11.91% | 0.0297 | 3.49% |
| 726.02 | Linoleic Acid (9c,12c-18:2), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 2.382 | | | | | | | |
| 728.99 | alpha-Linolenic Acid (9c,12c,15c-18:3), Miscellaneous (% (w/w)) | 3 | 3 | 0.2983 | 0.0189 | 0.2983 | 0.0189 | 0.0134 | 6.35% | 0.0027 | 4.80% |
| 728.02 | alpha-Linolenic Acid (9c,12c,15c-18:3), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.2960 | | | | | | | |
| 730.99 | Arachidic Acid (20:0), Miscellaneous (% (w/w)) | 2 | 2 | 0.0180 | 0.0028 | | | | | | |
| 730.02 | Arachidic Acid (20:0), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.0000 | | | | | | | |
| 732.99 | Gondoic Acid (11c-20:1), Miscellaneous (% (w/w)) | 2 | 1 | 0.0160 | | | | | | | |
| 736.99 | Arachidonic Acid (5c,8c,11c,14c-20:4), Miscellaneous (% (w/w)) | 1 | 1 | 0.0000 | | | | | | | |
| 740.99 | Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5), Miscellaneous (% (w/w)) | 2 | 2 | 0.0000 | | | | | | | |
| 742.99 | Behenic Acid (22:0), Miscellaneous (% (w/w)) | 2 | 1 | 0.0165 | | | | | | | |
| 744.02 | Erucic Acid (13c-22:1), Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.0000 | | | | | | | |
| 744.99 | Erucic Acid (13c-22:1), Miscellaneous (% (w/w)) | 1 | 1 | 0.0050 | | | | | | | |
| 746.99 | Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5), Miscellaneous (% (w/w)) | 2 | 2 | 0.0000 | | | | | | | |
| 748.99 | Lignoceric Acid (24:0), Miscellaneous (% (w/w)) | 1 | 1 | 0.0110 | | | | | | | |
| 750.99 | Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6), Miscellaneous (% (w/w)) | 2 | 2 | 0.0000 | | | | | | | |
| 752.99 | Nervonic Acid (24:1) isomers, Miscellaneous (% (w/w)) | 1 | 1 | 0.0050 | | | | | | | |
| 754.99 | Total n-3 Polyunsaturated (Omega-3) Fatty Acids, Miscellaneous (% (w/w)) | 2 | 2 | 0.3050 | 0.0212 | | | | | | |
| 756.99 | Total n-6 Polyunsaturated (Omega-6) Fatty Acids, Miscellaneous (% (w/w)) | 2 | 2 | 2.533 | 0.3712 | | | | | | |
| 758.02 | Total Saturated Fatty Acids, Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 4.783 | | | | | | | |
| 758.99 | Total Saturated Fatty Acids, Miscellaneous (% (w/w)) | 1 | 1 | 0.9900 | | | | | | | |
| 762.02 | Total Monounsaturated Fatty Acids, Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 0.8900 | | | | | | | |
| 762.99 | Total Monounsaturated Fatty Acids, Miscellaneous (% (w/w)) | 1 | 1 | 1.125 | | | | | | | |
| 766.02 | Total Polyunsaturated Fatty Acids, Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 1.125 | | | | | | | |

| 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 |
|-------------|--|-------------------------|------------------------|----------|--------|----------------------------|---------------------|------------------------|----------------|-----------------------|-----------------------|
| 766.99 | Total Polyunsaturated Fatty Acids, Miscellaneous (% (w/w)) | 1 | 1 | 2.565 | | | | | | | |
| 770.99 | Total Fat (equivalent to NLEA), Miscellaneous (% (w/w)) | 1 | 1 | 4.915 | | | | | | | |
| 772.99 | Total Fatty Acids, Miscellaneous (% (w/w)) | 2 | 2 | 4.673 | 0.0385 | | | | | | |
| 772.02 | Total Fatty Acids, Direct Methylation by Acid-Alkali Hydrolysis & GC (% (w/w)) | 1 | 1 | 2.764 | | | | | | | |

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

Goat Feed, Medicated

Test Material Code # 202025

Method Precision Report

Methods Reported: 89

Labs Reporting: 157

Issue Date : 06/30/2020

| 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 (%) | 43 | 39 | 9.694 | 0.4761 | 0.3098 | 0.1016 | 0.3260 | 3.18% | 1.04% | 3.35% | 3.208 |
| 001.99 | Loss on Drying, Miscellaneous (%) | 18 | 16 | 9.486 | 0.7165 | 0.5372 | 0.0934 | 0.5452 | 5.59% | 0.97% | 5.68% | 5.840 |
| 002.05 | Protein, Crude, Copper, Boric Acid (%) | 23 | 20 | 17.06 | 0.1528 | 0.1217 | 0.0719 | 0.1413 | 0.71% | 0.42% | 0.83% | 1.966 |
| 002.06 | Protein, Crude, Combustion Nitrogen Analyzer (%) | 111 | 102 | 17.31 | 0.4309 | 0.2730 | 0.1362 | 0.3051 | 1.58% | 0.79% | 1.77% | 2.240 |
| 003.00 | Fat, Crude, Diethyl Ether Ext., Direct (%) | 9 | 9 | 4.777 | 0.4246 | 0.4201 | 0.0867 | 0.4290 | 8.80% | 1.81% | 8.98% | 4.949 |
| 003.06 | Fat, Crude, Pet Ether (%) | 16 | 15 | 4.733 | 0.2936 | 0.2481 | 0.0596 | 0.2552 | 5.29% | 1.27% | 5.44% | 4.285 |
| 003.09 | Fat, Crude, Randall, Diethyl Ether Ext (%) | 12 | 12 | 4.840 | 0.1432 | 0.1390 | 0.0485 | 0.1473 | 2.87% | 1.00% | 3.04% | 3.035 |
| 003.10 | Fat, Crude, Randall, Pet Ether (%) | 19 | 17 | 4.648 | 0.2241 | 0.1762 | 0.0828 | 0.1947 | 3.82% | 1.79% | 4.22% | 2.351 |
| 003.13 | Fat, Crude, Randall, Hexane Ext. (%) | 9 | 8 | 4.654 | 0.3302 | 0.1967 | 0.0585 | 0.2052 | 4.15% | 1.23% | 4.33% | 3.507 |
| 003.14 | Fat, Crude, Ankom (%) | 44 | 39 | 4.479 | 0.3596 | 0.3047 | 0.0943 | 0.3190 | 6.84% | 2.12% | 7.16% | 3.383 |
| 004.00 | Fiber, Crude, Asbestos Free (%) | 14 | 12 | 5.817 | 0.9266 | 0.5180 | 0.1122 | 0.5300 | 8.65% | 1.87% | 8.85% | 4.724 |
| 004.06 | Fiber, Crude, Fibertec (%) | 16 | 15 | 6.157 | 0.6338 | 0.1545 | 0.1242 | 0.1982 | 2.57% | 2.07% | 3.30% | 1.596 |
| 004.07 | Fiber, Crude, ANKOM (%) | 63 | 58 | 5.869 | 0.5427 | 0.4393 | 0.1451 | 0.4626 | 7.54% | 2.49% | 7.94% | 3.187 |
| 005.00 | Ash, 2h @ 600°C (%) | 77 | 71 | 8.116 | 0.2756 | 0.1939 | 0.0611 | 0.2033 | 2.40% | 0.75% | 2.51% | 3.329 |
| 005.05 | Ash, 3h @ 550°C (%) | 25 | 24 | 8.296 | 0.2151 | 0.2104 | 0.0630 | 0.2196 | 2.54% | 0.76% | 2.65% | 3.484 |
| 008.02 | Fiber, Acid Detergent, Crucible (%) | 10 | 9 | 8.824 | 3.846 | 0.7087 | 0.1431 | 0.7230 | 9.29% | 1.88% | 9.48% | 5.053 |
| 008.08 | Fiber, Acid Detergent, Filter Bag - ANKOM (%) | 38 | 35 | 7.742 | 0.6830 | 0.5579 | 0.1442 | 0.5762 | 7.25% | 1.87% | 7.49% | 3.996 |
| 009.07 | Fiber, Neutral Detergent, AOAC -ENZ Pretreat (%) | 8 | 8 | 14.91 | 1.400 | 1.387 | 0.2689 | 1.413 | 9.31% | 1.80% | 9.48% | 5.255 |
| 009.09 | Fiber, Neutral Detergent, Filter Bag - ANKOM (%) | 39 | 36 | 14.57 | 0.8383 | 0.6536 | 0.2688 | 0.7067 | 4.52% | 1.86% | 4.89% | 2.629 |
| 010.99 | Moisture, Miscellaneous (%) | 15 | 12 | 9.883 | 0.5401 | 0.3943 | 0.0603 | 0.3989 | 3.96% | 0.61% | 4.01% | 6.615 |
| 011.01 | Loss on Drying, 135°C 2hr (%) | 54 | 49 | 10.92 | 0.5044 | 0.4543 | 0.0741 | 0.4603 | 4.14% | 0.68% | 4.20% | 6.211 |
| 012.00 | Starch, Polarimetric (Ewers) (%) | 10 | 10 | 33.68 | 0.4585 | 0.4119 | 0.2849 | 0.5008 | 1.22% | 0.85% | 1.49% | 1.758 |
| 012.01 | Starch, Enzymatic-Colorimetric Method (Megazyme) (%) | 11 | 10 | 32.07 | 1.884 | 1.156 | 0.5975 | 1.302 | 3.66% | 1.89% | 4.12% | 2.179 |
| 013.00 | Fat, Acid Pretreat, Acid hydrolysis (%) | 18 | 16 | 5.397 | 0.5115 | 0.5110 | 0.1861 | 0.5439 | 9.48% | 3.45% | 10.09% | 2.923 |
| 013.02 | Fat, Acid Pretreat, Mojonnier, Bak Ext (%) | 17 | 16 | 5.871 | 0.4171 | 0.3912 | 0.2439 | 0.4610 | 6.68% | 4.16% | 7.87% | 1.890 |
| 015.43 | Aluminum, ICP, Microwave (ppm) | 8 | 8 | 193.0 | 12.38 | 11.36 | 6.947 | 13.32 | 5.89% | 3.60% | 6.90% | 1.917 |
| 019.00 | Calcium, Ox-Mn04 Vol. (%) | 10 | 9 | 1.540 | 0.0452 | 0.0442 | 0.0130 | 0.0461 | 2.87% | 0.84% | 2.99% | 3.549 |
| 019.31 | Calcium, AAS, Dry ash (%) | 17 | 15 | 1.522 | 0.0717 | 0.0716 | 0.0231 | 0.0752 | 4.70% | 1.52% | 4.94% | 3.255 |
| 019.41 | Calcium, ICP, Dry ash (%) | 25 | 23 | 1.534 | 0.0817 | 0.0798 | 0.0248 | 0.0836 | 5.18% | 1.61% | 5.42% | 3.365 |
| 019.42 | Calcium, ICP, Open vessel (%) | 18 | 18 | 1.559 | 0.0942 | 0.0887 | 0.0449 | 0.0994 | 5.69% | 2.88% | 6.38% | 2.213 |
| 019.43 | Calcium, ICP, Microwave (%) | 24 | 23 | 1.548 | 0.0920 | 0.0832 | 0.0320 | 0.0892 | 5.40% | 2.08% | 5.79% | 2.787 |
| 021.43 | Cobalt, ICP, Microwave (ppm) | 8 | 8 | 5.777 | 0.6278 | 0.6077 | 0.2228 | 0.6473 | 10.52% | 3.86% | 11.20% | 2.905 |
| 022.31 | Copper, AAS, Dry ash (ppm) | 14 | 13 | 72.94 | 6.296 | 6.432 | 1.705 | 6.654 | 8.81% | 2.33% | 9.11% | 3.904 |
| 022.41 | Copper, ICP, Dry ash (ppm) | 18 | 18 | 70.85 | 5.319 | 4.723 | 3.458 | 5.854 | 6.67% | 4.88% | 8.26% | 1.693 |
| 022.42 | Copper, ICP, Open vessel (ppm) | 19 | 18 | 82.42 | 8.485 | 3.444 | 3.087 | 4.625 | 4.27% | 3.82% | 5.73% | 1.498 |
| 022.43 | Copper, ICP, Microwave (ppm) | 20 | 17 | 80.45 | 3.995 | 2.832 | 2.144 | 3.553 | 3.55% | 2.68% | 4.45% | 1.657 |

| 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 |
|-------------|--|-------------------------|--------------------------------|----------------|--------------|-----------------|----------------|--------------------|-------------------|------------------|----------------------|-------|
| 025.31 | Iron, AAS, Dry ash (ppm) | 14 | 13 | 481.9 | 56.87 | 46.84 | 7.676 | 47.47 | 9.54% | 1.56% | 9.67% | 6.183 |
| 025.41 | Iron, ICP, Dry ash (ppm) | 19 | 16 | 455.8 | 31.46 | 19.35 | 7.540 | 20.76 | 4.17% | 1.63% | 4.48% | 2.754 |
| 025.42 | Iron, ICP, Open vessel (ppm) | 16 | 15 | 366.4 | 128.0 | 127.5 | 16.79 | 128.6 | 34.79% | 4.58% | 35.09% | 7.658 |
| 025.43 | Iron, ICP, Microwave (ppm) | 16 | 15 | 487.2 | 44.01 | 32.17 | 11.92 | 34.31 | 6.71% | 2.49% | 7.15% | 2.878 |
| 027.31 | Magnesium, AAS, Dry ash (%) | 10 | 9 | 0.2511 | 0.0108 | 0.0104 | 0.0044 | 0.0113 | 4.13% | 1.75% | 4.49% | 2.564 |
| 027.41 | Magnesium, ICP, Dry ash (%) | 18 | 17 | 0.2433 | 0.0114 | 0.0096 | 0.0068 | 0.0118 | 3.92% | 2.79% | 4.81% | 1.726 |
| 027.42 | Magnesium, ICP, Open vessel (%) | 18 | 17 | 0.2420 | 0.0171 | 0.0124 | 0.0070 | 0.0142 | 5.17% | 2.93% | 5.94% | 2.026 |
| 027.43 | Magnesium, ICP, Microwave (%) | 18 | 16 | 0.2462 | 0.0157 | 0.0160 | 0.0022 | 0.0161 | 6.47% | 0.89% | 6.53% | 7.342 |
| 028.31 | Manganese, AAS, Dry ash (ppm) | 14 | 12 | 213.0 | 23.24 | 14.64 | 3.382 | 15.02 | 6.69% | 1.55% | 6.87% | 4.442 |
| 028.41 | Manganese, ICP, Dry ash (ppm) | 17 | 16 | 205.7 | 16.23 | 11.52 | 6.879 | 13.42 | 5.53% | 3.30% | 6.44% | 1.950 |
| 028.42 | Manganese, ICP, Open vessel (ppm) | 19 | 18 | 214.7 | 15.60 | 15.55 | 5.612 | 16.53 | 7.24% | 2.61% | 7.70% | 2.945 |
| 028.43 | Manganese, ICP, Microwave (ppm) | 20 | 19 | 212.1 | 24.80 | 9.877 | 6.242 | 11.68 | 4.55% | 2.87% | 5.38% | 1.872 |
| 031.01 | Phosphorus, Photometric (%) | 31 | 28 | 0.6753 | 0.0305 | 0.0181 | 0.0120 | 0.0217 | 2.66% | 1.76% | 3.19% | 1.814 |
| 031.41 | Phosphorus, ICP, Dry ash (%) | 22 | 20 | 0.6888 | 0.0590 | 0.0392 | 0.0128 | 0.0412 | 5.77% | 1.88% | 6.07% | 3.229 |
| 031.42 | Phosphorus, ICP, Open vessel (%) | 18 | 16 | 0.6529 | 0.0367 | 0.0281 | 0.0132 | 0.0310 | 4.27% | 2.00% | 4.71% | 2.358 |
| 031.43 | Phosphorus, ICP, Microwave (%) | 23 | 20 | 0.7032 | 0.0842 | 0.0431 | 0.0085 | 0.0439 | 6.33% | 1.25% | 6.45% | 5.140 |
| 032.31 | Potassium, AAS, Dry ash (%) | 9 | 9 | 1.072 | 0.0719 | 0.0669 | 0.0370 | 0.0765 | 6.24% | 3.45% | 7.13% | 2.067 |
| 032.41 | Potassium, ICP, Dry ash (%) | 20 | 18 | 1.090 | 0.0567 | 0.0572 | 0.0120 | 0.0584 | 5.24% | 1.10% | 5.35% | 4.849 |
| 032.42 | Potassium, ICP, Open vessel (%) | 17 | 17 | 1.107 | 0.0441 | 0.0316 | 0.0434 | 0.0537 | 2.86% | 3.92% | 4.85% | 1.238 |
| 032.43 | Potassium, ICP, Microwave (%) | 18 | 16 | 1.089 | 0.0746 | 0.0451 | 0.0091 | 0.0461 | 4.09% | 0.83% | 4.18% | 5.057 |
| 033.00 | Salt as chloride, Sol Cl (%) | 18 | 15 | 1.439 | 0.1687 | 0.0797 | 0.0118 | 0.0806 | 5.39% | 0.80% | 5.45% | 6.840 |
| 033.01 | Salt as chloride, Poten Cl (%) | 24 | 20 | 1.535 | 0.0292 | 0.0236 | 0.0122 | 0.0266 | 1.54% | 0.80% | 1.73% | 2.168 |
| 035.31 | Sodium, AAS, Dry ash (%) | 12 | 11 | 0.2796 | 0.0191 | 0.0111 | 0.0109 | 0.0155 | 3.91% | 3.84% | 5.48% | 1.427 |
| 035.41 | Sodium, ICP, Dry ash (%) | 21 | 20 | 0.2964 | 0.0259 | 0.0174 | 0.0074 | 0.0189 | 5.95% | 2.54% | 6.47% | 2.545 |
| 035.42 | Sodium, ICP, Open vessel (%) | 17 | 17 | 0.2951 | 0.0205 | 0.0193 | 0.0096 | 0.0216 | 6.56% | 3.26% | 7.32% | 2.247 |
| 035.43 | Sodium, ICP, Microwave (%) | 19 | 17 | 0.2861 | 0.0350 | 0.0156 | 0.0037 | 0.0160 | 5.32% | 1.27% | 5.47% | 4.322 |
| 036.42 | Sulfur, ICP, Open vessel (%) | 20 | 18 | 0.3355 | 0.0207 | 0.0205 | 0.0072 | 0.0218 | 6.13% | 2.16% | 6.50% | 3.006 |
| 036.43 | Sulfur, ICP, Microwave (%) | 14 | 14 | 0.3447 | 0.0174 | 0.0167 | 0.0069 | 0.0180 | 4.83% | 2.00% | 5.23% | 2.611 |
| 037.31 | Zinc, AAS, Dry ash (ppm) | 14 | 12 | 480.8 | 127.5 | 28.31 | 13.06 | 31.18 | 6.35% | 2.93% | 6.99% | 2.388 |
| 037.41 | Zinc, ICP, Dry ash (ppm) | 18 | 17 | 440.0 | 23.01 | 22.28 | 8.147 | 23.72 | 5.06% | 1.85% | 5.39% | 2.912 |
| 037.42 | Zinc, ICP, Open vessel (ppm) | 18 | 15 | 443.2 | 41.33 | 34.89 | 10.41 | 36.41 | 8.00% | 2.39% | 8.35% | 3.496 |
| 037.43 | Zinc, ICP, Microwave (ppm) | 21 | 20 | 452.7 | 58.74 | 30.35 | 14.76 | 33.75 | 6.55% | 3.18% | 7.28% | 2.287 |
| 038.43 | Molybdenum, ICP, Microwave (ppm) | 8 | 8 | 3.003 | 0.3260 | 0.3022 | 0.1729 | 0.3481 | 10.06% | 5.76% | 11.59% | 2.014 |
| 106.02 | Vitamin A, LC (KU / kg) | 12 | 12 | 30.18 | 7.726 | 7.400 | 3.141 | 8.039 | 24.52% | 10.41% | 26.64% | 2.559 |
| 109.02 | Vitamin E, LC (IU / kg) | 14 | 14 | 111.2 | 25.42 | 25.30 | 3.594 | 25.55 | 22.74% | 3.23% | 22.97% | 7.109 |
| 120.00 | Alanine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.7686 | 0.0290 | 0.0224 | 0.0124 | 0.0256 | 2.90% | 1.60% | 3.31% | 2.067 |
| 121.00 | Arginine, Post-col Ninhydrin Der (%) | 18 | 16 | 0.9768 | 0.0447 | 0.0440 | 0.0177 | 0.0474 | 4.51% | 1.82% | 4.86% | 2.677 |
| 122.00 | Aspartic, Post-col Ninhydrin Der (%) | 18 | 16 | 1.618 | 0.0662 | 0.0505 | 0.0307 | 0.0591 | 3.10% | 1.89% | 3.63% | 1.924 |
| 124.00 | Cysteine/Cystine, PAO Post-col Ninhydrin Der (%) | 17 | 14 | 0.2795 | 0.0444 | 0.0360 | 0.0060 | 0.0365 | 13.20% | 2.21% | 13.38% | 6.066 |
| 125.00 | Glutamic, Post-col Ninhydrin Der (%) | 18 | 18 | 2.850 | 0.1341 | 0.1292 | 0.0506 | 0.1388 | 4.53% | 1.78% | 4.87% | 2.741 |
| 126.00 | Glycine, Post-col Ninhydrin Der (%) | 18 | 16 | 0.6909 | 0.0256 | 0.0204 | 0.0099 | 0.0227 | 2.94% | 1.42% | 3.27% | 2.298 |
| 127.00 | Histidine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.3850 | 0.0188 | 0.0182 | 0.0067 | 0.0194 | 4.72% | 1.75% | 5.04% | 2.876 |
| 128.00 | Isoleucine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.6323 | 0.0487 | 0.0476 | 0.0142 | 0.0497 | 7.54% | 2.24% | 7.86% | 3.503 |
| 129.00 | Leucine, Post-col Ninhydrin Der (%) | 18 | 16 | 1.229 | 0.0545 | 0.0371 | 0.0179 | 0.0412 | 3.00% | 1.45% | 3.33% | 2.304 |
| 130.00 | L-Lysine, Post-col Ninhydrin Der (%) | 18 | 15 | 0.8216 | 0.0394 | 0.0291 | 0.0155 | 0.0330 | 3.52% | 1.88% | 3.99% | 2.122 |
| 131.00 | Methionine, PAO Post-col Ninhydrin Der (%) | 17 | 15 | 0.2415 | 0.0322 | 0.0215 | 0.0044 | 0.0219 | 8.67% | 1.78% | 8.85% | 4.959 |

Test Material Code # 202025

Issue Date : 06/30/2020

| 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 |
|-------------|--|-------------------------|--------------------------------|----------------|--------------|-----------------|----------------|--------------------|-------------------|------------------|----------------------|-------|
| 132.00 | Phenylalanine, Post-col Ninhydrin Der (%) | 18 | 17 | 0.7428 | 0.0617 | 0.0453 | 0.0158 | 0.0480 | 6.03% | 2.09% | 6.38% | 3.047 |
| 133.00 | Proline, Post-col Ninhydrin Der (%) | 18 | 15 | 0.9579 | 0.0961 | 0.0446 | 0.0139 | 0.0467 | 4.80% | 1.50% | 5.02% | 3.354 |
| 134.00 | Serine, Post-col Ninhydrin Der (%) | 18 | 16 | 0.7657 | 0.0450 | 0.0315 | 0.0103 | 0.0332 | 4.07% | 1.34% | 4.29% | 3.207 |
| 135.00 | Threonine, Post-col Ninhydrin Der (%) | 18 | 16 | 0.6050 | 0.0337 | 0.0246 | 0.0085 | 0.0260 | 4.02% | 1.39% | 4.25% | 3.070 |
| 137.00 | Tyrosine, Post-col Ninhydrin Der (%) | 13 | 11 | 0.5101 | 0.0732 | 0.0762 | 0.0051 | 0.0764 | 14.87% | 1.00% | 14.90% | 14.83 |
| 138.00 | Valine, Post-col Ninhydrin Der (%) | 18 | 16 | 0.7466 | 0.0422 | 0.0430 | 0.0096 | 0.0441 | 5.76% | 1.29% | 5.90% | 4.569 |
| 400.01 | Water Activity, Aqualab chilled mirror (Units) | 9 | 8 | 0.5574 | 0.0198 | 0.0205 | 0.0043 | 0.0210 | 3.68% | 0.77% | 3.76% | 4.867 |

Notes: Precision Calculations provided for methods with 8 or more labs used in calculations.