Supplementary Material

**Supplemental Table 1.** Laboratory nutrient analysis of test diets on a caloric basis1.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| per 1,000 kcals (ME) | Unit | **Baseline** | **HA-GF** | **LA-GF** | **HA-GI** | **LA-GI** |
| **Macronutrients** | |  |  |  |  |  |
| Crude Protein | g | 67.67 | 71.50 | 73.91 | 74.14 | 79.86 |
| Crude Fat | g | 33.83 | 41.29 | 37.69 | 40.52 | 34.10 |
| Crude Fiber | g | 4.83 | 8.92 | 12.10 | 8.71 | 10.17 |
| Ash | g | 21.98 | 14.94 | 20.02 | 15.44 | 18.92 |
| NFE2 | g | 135.88 | 118.88 | 118.10 | 118.73 | 122.06 |
| TDF3 | g | 18.80 | 30.48 | 29.45 | 25.91 | 38.18 |
| Soluble Fiber | g | 1.16 | 3.88 | 3.24 | 4.96 | 6.70 |
| Insoluble Fiber | g | 17.64 | 26.60 | 26.21 | 20.95 | 31.48 |
| **Amino Acids** | |  |  |  |  |  |
| Methionine + Cystine | g | 2.14 | 1.69 | 1.65 | 1.98 | 2.10 |
| Methionine | g | 1.01 | 1.00 | 0.91 | 1.10 | 1.17 |
| Carnitine | mg | 5.41 | 2.63 | 3.68 | 3.97 | 3.56 |
| Taurine | g | 0.03 | 0.08 | 0.06 | 0.11 | 0.09 |
| Arginine | g | 3.35 | 4.35 | 5.62 | 4.13 | 4.37 |
| Histidine | g | 1.13 | 1.66 | 1.62 | 1.65 | 1.87 |
| Isoleucine | g | 2.14 | 2.85 | 2.80 | 2.89 | 3.03 |
| Leucine | g | 5.75 | 4.66 | 5.24 | 5.68 | 8.57 |
| Lysine | g | 2.75 | 4.55 | 4.89 | 3.67 | 3.47 |
| Cystine | g | 1.13 | 0.69 | 0.82 | 0.88 | 0.93 |
| Phenylalanine | g | 2.69 | 2.72 | 2.84 | 2.98 | 3.85 |
| Threonine | g | 1.88 | 1.91 | 1.94 | 2.12 | 2.83 |
| Tryptophan | g | 0.52 | 0.64 | 0.56 | 0.69 | 0.67 |
| Valine | g | 2.69 | 3.19 | 3.06 | 3.22 | 3.73 |
| **Fatty Acids** |  |  |  |  |  |  |
| Linoleic Acid | g | 3.93 | 7.84 | 7.42 | 8.68 | 8.04 |
| α-Linolenic Acid | g | 0.20 | 0.50 | 0.59 | 0.47 | 0.47 |
| **Minerals** |  |  |  |  |  |  |
| Calcium | g | 5.26 | 3.08 | 4.18 | 3.75 | 4.72 |
| Phosphorus | g | 3.30 | 1.88 | 2.44 | 2.29 | 2.80 |
| Potassium | g | 1.97 | 2.69 | 3.45 | 1.82 | 2.19 |
| Sodium | g | 1.30 | 0.42 | 0.41 | 0.44 | 0.47 |
| Chloride | g | 2.00 | 0.64 | 1.35 | 1.13 | 1.46 |
| Magnesium | g | 0.38 | 0.28 | 0.32 | 0.30 | 0.35 |
| Iron | mg | 75.76 | 35.47 | 46.53 | 40.79 | 59.75 |
| Copper | mg | 4.37 | 4.05 | 4.62 | 3.89 | 4.72 |
| Manganese | mg | 19.32 | 3.71 | 4.36 | 6.17 | 7.37 |
| Zinc | mg | 66.51 | 29.93 | 30.33 | 29.22 | 32.06 |
| Iodine | mg | 0.60 | 0.42 | 0.33 | 0.39 | 0.28 |
| Selenium | mg | 0.14 | 0.16 | 0.24 | 0.15 | 0.18 |
| **Vitamins** |  |  |  |  |  |  |
| Vitamin A, Total | IU | 12954.90 | 3824.46 | 3445.33 | 5126.65 | 7170.23 |
| Vitamin D, Total | IU | 268.06 | 349.19 | 192.29 | 281.14 | 290.02 |
| Vitamin E, Total | IU | 43.95 | 116.12 | 88.93 | 77.73 | 113.38 |
| Thiamin | mg | 8.07 | 2.20 | 2.48 | 2.20 | 2.23 |
| Riboflavin | mg | 1.55 | 2.19 | 2.01 | 2.00 | 2.50 |
| Pantothenic | mg | 18.10 | 7.45 | 8.77 | 6.08 | 6.35 |
| Niacin | mg | 13.91 | 23.77 | 19.37 | 21.89 | 21.59 |
| Pyridoxine | mg | 2.36 | 2.16 | 1.20 | 1.36 | 1.65 |
| Folic Acid | mg | 2.64 | 0.22 | 0.24 | 0.23 | 0.30 |
| Vitamin B12 | mg | 0.08 | 0.03 | 0.02 | 0.02 | 0.02 |
| Choline | mg | 347.01 | 407.39 | 424.04 | 401.04 | 417.54 |

1HA-GI=high animal grain inclusive (3.60 kcal/g), HA-GF=high animal grain-free (3.60 kcal/g), LA-GI=low animal grain inclusive (3.50 kcal/g), LA-GF=low animal grain-free (3.42 kcal/g), Baseline = Purina Dog Chow Chicken (3.46 kcal/g)

2NFE: Nitrogen Free Extract

3TDF: Total Dietary Fiber