

Effect of Storage Time on Macro- and Micronutrient concentrations of LabDiet® New World Primate Diet, 5040, and High Protein Monkey Diet, 5045/5047 (2011).

LabDiet® New World Primate Diet (5040) and High Protein Monkey Diet (5045/5047*) were stored at 70°F (21°C) and 50% relative humidity for 0, 3, 6, 9, 12 and 18 months post manufacturing. Protein, fat and fiber levels are provided in Figures 5 and 6 for LabDiet® 5040 and 5045, respectively. Vitamin A, E, thiamin, pyridoxine, folate and B₁₂ and calcium and phosphorous levels are recorded in Tables 7 and 8 for LabDiet® 5040 and 5045, respectively.

*Similar diet formulation to LabDiet 5048 with the exception that 5048 is assayed for contaminants monitored for GLP studies.

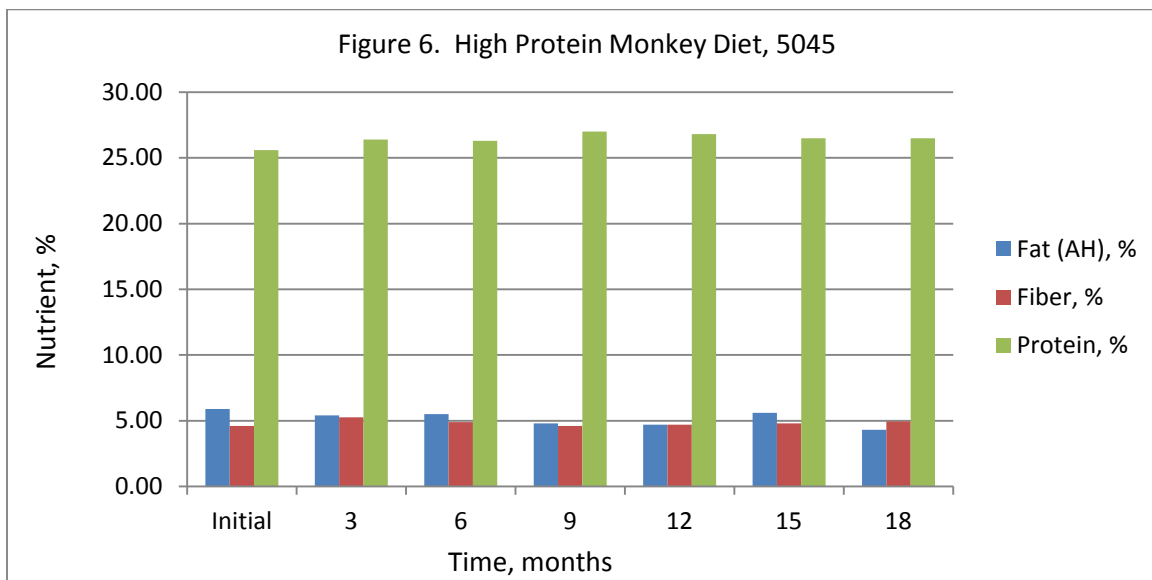
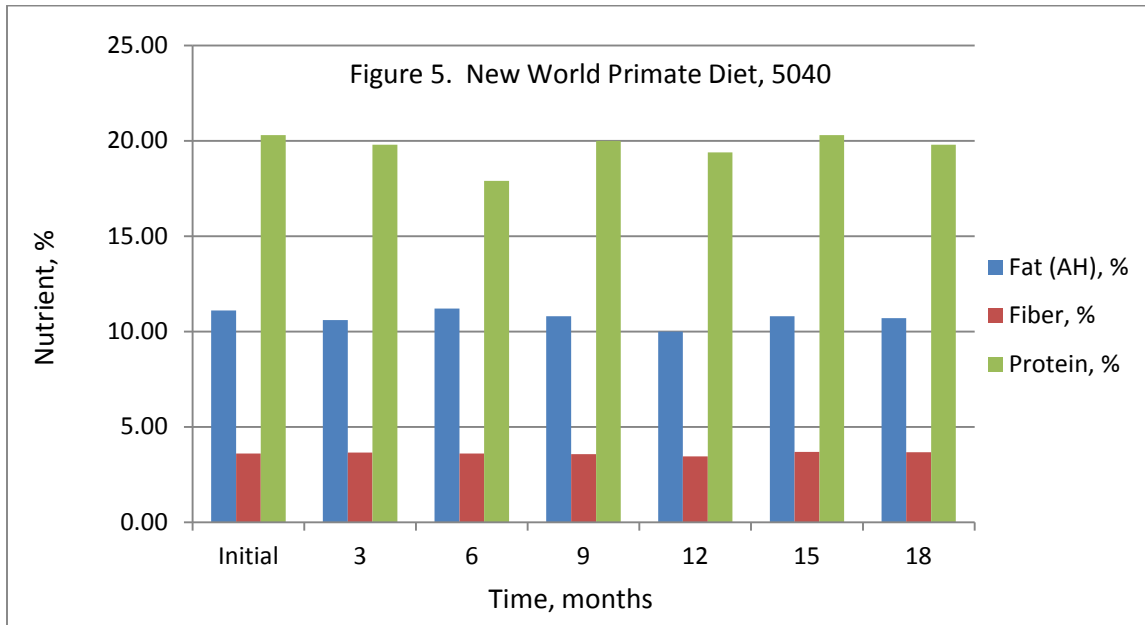


Table 7. New World Primate Diet (5040)

Nutrient	Min. Dietary Nutr. Conc.	Time, months							
		Initial ¹ (1°)	3	6	9	12	15	18	% loss ²
Vitamin A, IU/g	8.0	15.3	13.7	12.9	12.3	12.3	13.4	9.88	18.9
Vitamin C, mg/g	0.2	0.7	0.8	0.8	0.8	0.7	NA	0.7	0.0
Thiamin, mg/kg	3.0	15.3	11.9	15.6	15.7	17.3	15.7	15.5	0.1
Pyridoxine, mg/kg	4.0	12.3	14.3	14.5	14.0	12.3	12.0	11.2	0.0
Folate, mg/kg	4.0	26.9	27.4	30.3	23.8	23.4	28.2	27.2	0.7
B ₁₂ , ug/kg	30.0	81.9	78.7	87.2	78.7	84.5	99.5	82.30	0.0
Ca, %	0.8	1.1	1.2	1.2	1.2	1.1	1.1	1.2	0.0
P, %	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.0

Table 8. High Protein Monkey Diet (5045)

Nutrient	Min. Dietary Nutr. Conc.	Time, months							
		Initial ¹ (1°)	3	6	9	12	15	18	% loss ²
Vitamin A, IU/g	8.0	27.0	24.3	21.8	19.1	20.3	18.2	15.3	26.5
Vitamin C, mg/g	0.2	1.0	1.0	1.0	1.0	1.0	NA	1.0	1.2
Thiamin, mg/kg	3.0	14.2	11.9	16.4	15.2	13.5	14.2	16.0	0.0
Pyridoxine, mg/kg	4.0	14.2	16.6	15.2	16.2	14.1	13.9	13.7	0.0
Folate, mg/kg	4.0	9.5	9.7	9.7	9.7	8.6	10.6	9.9	0.0
B ₁₂ , ug/kg	30.0	59.0	60.2	64.2	63.8	67.8	66.9	63.1	0.0
Ca, %	0.8	1.2	1.2	1.2	1.3	1.3	1.1	1.2	3.3
P, %	0.6	0.7	0.8	0.7	0.7	0.7	0.6	0.7	1.2

¹ Initial values are assayed values taken immediately post-manufacturing. These values will differ from the calculated values on the respective diet spec sheets as they account for loss that occurred during manufacturing.

² Average percent loss at each time point during the entire shelf life of the product (1° to 18 mo). Values at each time point which are greater than initial concentrations are potentially due to assay variation as the nutrients will not increase over time.

Nutrient stability of both macro- and micro-nutrients were similar in the New World Primate and High Protein Monkey diets as that seen in the mouse diets referenced in Tables 7 & 8 and Figures 5 & 6. The Association of American Feed Control Officials Incorporated (AAFCO) states the analytical variation for vitamin A and B₁₂ are 30 and 45%, respectively, thus explaining why you will see some increases in the value above that of the analysis taken at the start of the data collection period (1°). Because of this variation, the percent loss was taken at each time point compared to 1°, and then averaged for all 18 months, verses just looking at the loss at 18 months as the 18 month value could have been greater than the initial value giving a false sense that no degradation occurred.

Based on this data, when stored properly, LabDiet standard diets can be stored for at least 9 months from the date of manufacture, if not longer, as all concentrations were still above that required by the animals.