

**Effect of Storage Time on Macro- and Micronutrient concentrations of LabDiet® Mouse Diet, 5015, and PicoLab® Rodent Diet 20, 5053 (2011).**

LabDiet® Mouse Diet (5015) and PicoLab® Rodent Diet 20 (5053) 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 3 and 4 for LabDiet® 5015 and 5053, respectively. Vitamin A, E, thiamin, pyridoxine, folate and B<sub>12</sub> and calcium and phosphorous levels are recorded in Tables 5 and 6 for LabDiet® 5015 and 5053, respectively.

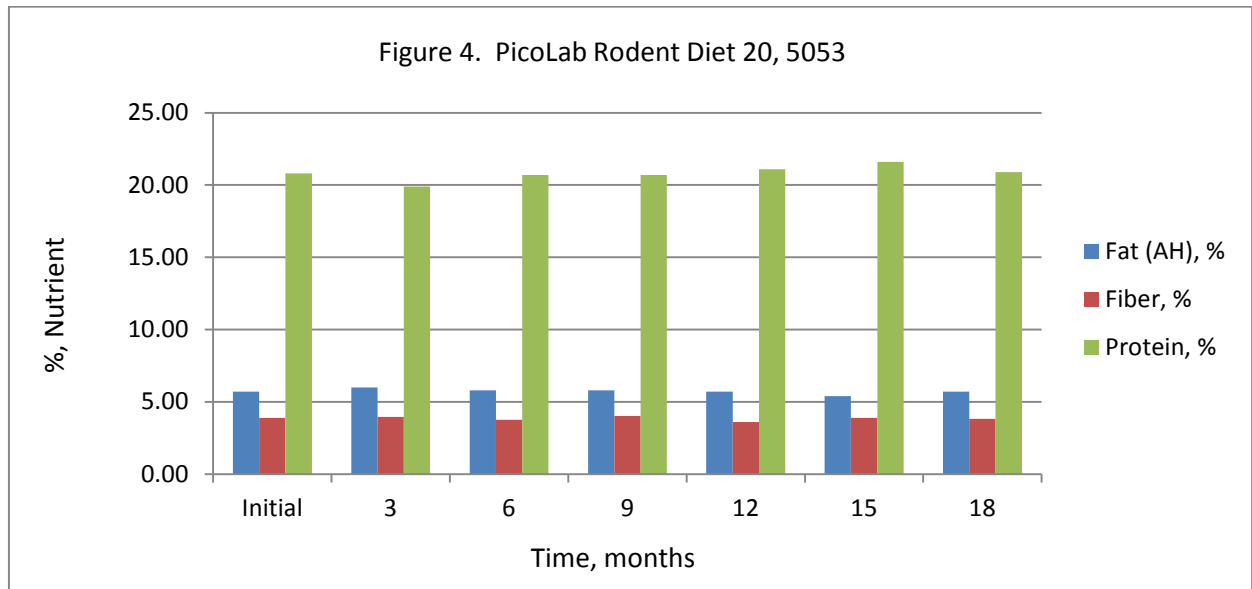


Table 5. Mouse Diet (5015)

Nutrient	Min. Nutr. Requirements	Time, months							
		Initial <sup>1</sup> (1°)	3	6	9	12	15	18	% loss <sup>2</sup>
Vitamin A, IU/g	2.4	19.8	20.3	16.3	14.7	11.3	14.8	10.6	25.9
Vit E, IU/kg	32.0	83.1	86.4	81.2	87.6	85.7	88.4	86.3	0.0
Thiamin, mg/kg	5.0	11.9	8.1	11.2	11.3	10.1	10.6	10.5	13.4
Pyridoxine, mg/kg	8.0	8.3	11.2	10.1	10.1	8.6	9.1	9.6	0.0
Folate, mg/kg	0.5	2.4	2.8	2.9	2.5	2.2	2.7	2.6	0.0
B <sub>12</sub> , ug/kg	10.0	39.9	37.9	49.7	46.7	44.7	52.6	47.2	0.0
Ca, %	0.5	1.4	1.1	1.0	1.0	1.0	1.0	1.0	0.0
P, %	0.3	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.0

Table 6. PicoLab Rodent Diet 20 (5053)

Nutrient	Min. Nutr. Requirements	Time, months							
		Initial <sup>1</sup> (1°)	3	6	9	12	15	18	% loss <sup>2</sup>
Vitamin A, IU/g	2.4	13.2	13.0	15.9	12.4	9.7	10.2	8.4	12.0
Vit E, IU/kg	32.0	90.9	84.4	89.5	95.2	81.4	93.4	98.9	0.5
Thiamin, mg/kg	5.0	10.5	13.4	12.6	9.4	11.9	11.3	11.3	0.0
Pyridoxine, mg/kg	8.0	7.7	11.4	10.4	10.6	11.2	8.5	9.4	0.0
Folate, mg/kg	0.5	2.5	2.5	2.3	2.4	2.3	3.7	2.9	0.0
B <sub>12</sub> , ug/kg	10.0	44.6	46.2	55.8	50.4	51.3	71.6	73.3	0.0
Ca, %	0.5	1.0	1.0	1.0	0.9	0.9	0.9	0.9	7.5
P, %	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0

<sup>1</sup> 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.

<sup>2</sup> 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.

As expected, the stability of protein, fat and fiber is excellent which we have observed consistently with all of our laboratory animal diets when stored at 70°F (21°C) and 50% relative humidity regardless of storage time. Small losses, per month, are expected for thiamin (2.9%), pyridoxine (2.9%), folate (4.5%) and B<sub>12</sub> (4.0%) (Tobin et al, 2007); however, we did not see this with our data with the exception of thiamin which had about a 13% loss in diet 5015. This loss may actually be analytical variation at the 3 month time point as a loss was not observed at any other time point during our data collection and analysis.

Vitamin A concentrations decreased an average of 18.9% over the course of the 18 month storage life with an estimated average loss per month of 1.05%. BASF, a manufacturer of vitamins, estimates losses of vitamin A per month at about 8.0% (Tobin et al, 2007) which is well above what we observed in this set of data.

All nutrient concentrations at 18 months post manufacture still exceeded the minimum nutrient recommendations of the NRC.