

# **A SURVEY OF VITAMIN A, D AND E NUTRITIONAL STATUS IN CAPTIVE BLACK AND WHITE RUFFED LEMURS (*Varecia variegata variegata* ).**

Janet L. Dempsey<sup>1</sup>, Ingrid J. Porton<sup>1</sup>, Randall E. Junge<sup>1</sup>, Michael F. Holick<sup>2</sup>, Tai C. Chen<sup>2</sup>, Zhiren Lu<sup>2</sup>, Phyllis E. Bowen<sup>3</sup>, and Maria Stacewicz-Sapuntzakis<sup>3</sup>

<sup>1</sup>*Saint Louis Zoological Park, St. Louis, Missouri*

<sup>2</sup>*Vitamin D, Skin and Bone Research Laboratory, Boston University Medical Center, Boston, Massachusetts*

<sup>3</sup>*Department of Human Nutrition and Dietetics, University of Illinois at Chicago, Chicago, Illinois*

Serum levels of 25-OH vitamin D, retinol, a-tocopherol and y-tocopherol were determined for captive black and white ruffed lemurs (*Varecia variegata variegata*) imported from Park Ivoloina, Madagascar (n=8, 4 males, 4 females). Serum samples were obtained at the beginning and end of the 3 month quarantine period. Serum levels of 25-OH vitamin D decreased over time for both males and females with no differences between genders (P<0.05). Serum 25-OH vitamin D had initial and final means of: 29.0-6.1 ng/ml and 11.8-5.7 ng/ml for males, 43.8-30.9 ng/ml and 8.3- 4.6 ng/ml for females. Serum retinol tended to decrease over time in both males and females. The initial range for serum retinol was 27.5-35.1 µg/dl for males, 27.5-32.9 µg/dl for females (n=3) and the final range was 18.4-28.4 µg/dl for males, 14.8-26.3 µg/dl for females (n=4). Serum a-tocopherol tended to increase over time in both males and females. The initial range for serum a-tocopherol was 134.0-318.0 µg/dl for males, 68.0-142.0 µg/dl for females (n=3) and the final range was 145.0-295.0 µg/dl for males, 73.0-224.0 µg/dl for females (n=4). Values obtained for serum y-tocopherol showed no obvious trend in either males or females. The results obtained provide a basis for comparison for future nutrition research with ruffed lemurs.

Key words: Lemurs, *Varecia variegata variegata*, serum, vitamin D, retinol, tocopherol