

HUSBANDRY AND MEDICAL ASPECTS OF REPTILE HIBERNATION

Rob L. Coke^{1*}, DVM

¹San Antonio Zoo, San Antonio, Texas 78212, USA

Abstract: Hibernation is a state of inactivity or dormancy related to passing the winter in a torpid or resting state. In reptiles, the ambient temperature affects the rate of metabolic functions and the seasonal fluctuations of ambient temperatures play a major role in reproductive processes such as egg and sperm production.

Temperature changes for hibernation vary between different groups of reptiles. Snakes from the more northern climates (i.e. Colubrids) have a winter cycle that drops to low ambient temperatures (10-15° C or 50-60° F). Some pythons and boas from the equatorial regions have a consistent temperature cycle throughout the year and have a very limited requirement for hibernation. However, many pythons and boas require a winter cycle that has wide shifts in temperature with daytime highs >35° C (high 90's° F) and nighttime lows <20° C (mid 60's° F).

A hibernaculum may be constructed using various methods and materials. Many are constructed using wooden or styrofoam boxes, while others use old refrigerators. In larger operations, a whole room may be temperature controlled via thermostats on heaters and air conditioners.

Hibernation can be benign as long as the reptile is healthy prior to cooling. The environment must also be appropriate for that species. Preparations for hibernation include decreased feeding, decreased light cycles, altered temperature cycles, and a short fasting period to empty the gastrointestinal tract. A thorough medical exam should be performed prior to the cooling aspect of hibernation to determine if any underlying medical conditions are present. The reptile should be weighed at this time to help determine approximate health status as well as to provide a reference point for weight loss during hibernation. For some tortoise species (i.e. *Testudo sp*) the Jackson Ratio applies the weight versus the carapace length to determine body condition.

A post-hibernation examination will aid in determining if any problems developed during the cooling period. Conditions that may arise after hibernation include post-hibernation anorexia, dehydration, respiratory infections, stomatitis, vitamin deficiency (i.e. Vitamin A), and neurologic damage (result of excessively low temperatures). A complete blood cell count may reveal an anemia or low/high white blood cell count. Plasma biochemistry will assist in evaluating glycogen reserves (i.e. blood glucose) and dehydration (i.e. blood urea nitrogen). With proper husbandry and good medical care, hibernation of may result in positive experience, and possibly, for the breeding animal, reproduction and offspring.

Key words: hibernation, reptile, husbandry, medicine, hibernaculum

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