4-2016

Effects of Nutrition on Female Leopard Geckos

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**Introduction**

When intending to breed female reptiles, it is typically a good idea to increase their daily calcium intake to assist in shell development. If the female is unable to obtain the necessary amount of calcium from her environment then she will pull calcium from her bones and become more at risk for metabolic bone diseases. However it is unclear whether the diet of the female has any effect on her behavior towards males. This research was aimed at determining how the diet of female leopard geckos affected their overall behavior. This included behavior towards unfamiliar males and quantitative measurements.

**Discussion**

Females fed undusted crickets are going to do very poorly in a captive setting. Gut loading alone is not enough to satisfy all the nutritional requirements and so supplementation is needed. It was also noticed that while the total body weight of the female would change, the tail size would stay the same overall. I believe the reason I did not observe copulation among these females is because of two reasons; some of the males used had very low libido, and the time length given for observation was not long enough to allow for initiation and completion of copulation.

**Methods**

I kept 16 female leopard geckos in separate sterile containers while controlling humidity and temperature. Once a week I would measure their total body weight, tail cc, and tail width and height. I fed 14 females twice a week and 2 females one time a week as they would have become obese if fed more. They were separated out into four groups of four females each. All were fed crickets, one was unsupplemented, one was supplemented with vitamins, one was supplemented with calcium, and one was supplemented with calcium with D3. Once a month I introduced a male into the female enclosure and recorded time spent interacting and behavior exhibited. The maximum amount of time I allowed the male to stay in the female’s cage was 5 minutes. I would record all interaction between the two geckos and use that to give the female a rank from -1 to 2 with -1 being aversive or no interaction and 2 being copulation. No females achieved a 2 rank however some did appear to be more interested in the males than others.

**Results**

- **R²** values suggest females fed Calcium with D3 supplemented crickets will have an increase in total body weight.
- **R²** values suggest females fed Calcium dusted crickets under certain conditions will have an increase in total body weight.
- **R²** values suggest females fed unsupplemented crickets would lose total body weight.
- There was statistically no change in tail size throughout the experiment.
- There were two females fed unsupplemented crickets and one fed vitamin supplemented crickets that lost weight throughout the experiment.
- Fecals for unsupplemented females were not well formed while fecals for Calcium with D3 females developed calcium deposits.
- Female behavior toward males was erratic and slightly dependent on male initiative.

**Acknowledgements**

Dennis Ferraro  
UNL UCARE program  
UNL IACUC  
UNL Herpetology lab  
Nebraska Herpetological Society