NUTRITIONAL COMPOSITION OF EXTRA-SMALL CRICKET (*ACHETA DOMESTICUS*) NYMPHS FED DRY VERSUS GEL GUT-LOADING DIETS

Andrew Young, BS[1]*, Katelyn Rogers, BS[1], Rebecca Snavely, BS[1], Kevin Barrett, BS[1], Ellen Bronson, med. vet., DACZM[1], and Nichole Huntley, PhD[2]

[1]Maryland Zoo in Baltimore, Baltimore, MD 21217, USA.
[2]Mazuri Exotic Animal Nutrition, Arden Hills, MN 55126, USA.

Crickets (*Acheta domesticus*) are a common food source for reptiles and amphibians in a zoological setting. In order to ensure they are nutritionally complete for these animals, crickets are generally fed a gut-loading diet. Several studies have provided baseline information on gut-loading standard cricket sizes, but little information is available on the smallest nymphs fed to small amphibians with specialized diet needs. The goal of this study was to examine the nutritional composition of extra small (1/8") crickets fed different gut-loading diets. Two commercially available dry powder diets were compared to a novel gut-loading gel diet. Crickets were analyzed at seven time points over 48h and compared to a control group that was not fed a gut-loading diet. Water was available in the form of water pillows for all 4 treatment groups. Initial results reveal that the levels of calcium and phosphorus were highest in all three gut-loading groups 24h after the beginning of gut-loading and dropped significantly 48h after the beginning of gut-loading. Only the gel diet obtained calcium-phosphorus ratios above 1:1 and only 24h after the beginning of gut-loading. Preliminary results suggest that standard 48h gut-loading in very small cricket nymphs may not be optimal for calcium provision for small amphibians and reptiles. Furthermore, gel diets may be more palatable, so small nymphs are able to ingest more nutrients than dry diets. These initial results have spurred a second experimental trial more closely examining the first 48h of gut-loading to pinpoint the ideal gut-loading methods for extra-small crickets.