

THE DEVELOPMENT AND EVALUATION OF A GUT-LOADING DIET FOR FEEDER CRICKETS FORMULATED TO PROVIDE A BALANCED NUTRIENT PACKAGE FOR INSECTIVOROUS AMPHIBIANS AND REPTILES

Lydia Attard

*Toronto Zoo, 361A Old Finch Avenue, Scarborough, ON M1B 5K7
University of Guelph, Guelph ON*

ABSTRACT

Obligate insectivores in their natural habitats consume a wide variety of insect species. In captivity, the diversity of prey items is limited to very few species which has led to nutritional deficiencies. Zoological institutions, therefore, have a responsibility to administer feeding programs which include supplementation techniques that compensate for known shortcomings in the nutrient composition of their feeder insects. Gut-loading is one of the most utilized supplemental techniques. It offers a nutrient dense diet to a prey species such that after sufficient ingestion, its gastrointestinal tract is filled and its nutritive composition is balanced with respect to the predator, thus providing it with its nutritional requirements. This study evaluates a specially formulated gut-loading diet (GLD) which enhances the nutritive quality of one of the most commonly used commercial insect prey species, the domestic house cricket (*Acheta domestica*). The GLD formulation was based on the nutritional requirements of the end consumers, namely insectivorous amphibians and reptiles, in relation to the nutritional composition of a cricket. This included the addition of nutrients in adequate amounts and in physically/chemically absorbable forms to meet the estimated nutritional and physiological requirements of the end consumers. In addition, its physical form and nutritive provisions met with the foraging and palatable requirements of the vehicle of delivery, the cricket. Preliminary analytical results thus far, are promising.