

## **CAROTENOID GUT-LOADING OF CRICKETS AND MEALWORMS**

*Erin Kendrick, M.S.\* and Michael Maslanka, M.S.*

*Department of Nutrition Sciences, Smithsonian Conservation and Biology Institute, National Zoological Park, 3001 Connecticut Ave NW, Washington, DC 20008, USA*

### **Abstract**

The lack of diversity of invertebrate prey items available to feed captive animals limits available nutrients, requiring manipulation of the diet fed to these prey items prior to offering to other animals. Of late, much of the gut-loading research and recommendations focused on correcting the Ca:P imbalance inherent to the insects available through commercial production. More recently, attention has shifted to also find ways to improve levels of other nutrients, including carotenoids. Increasing carotenoids, in particular, may allow for maintaining appropriate coloration of species reliant on those cues for breeding and impact breeding success, health, and immune function. We will discuss the results of using several limited-ingredient mixes (1-3 ingredients) for gut-loading mealworms and multiple sizes of crickets, under typical captive conditions. The gut-load recipes were intended to increase carotenoid levels while maintaining appropriate balance of other nutrients, specifically calcium and phosphorus.