Diets of a Diet: How Does the Introduction of Different Minerals/Vitamins Affect the Lifespan of Feeder Crickets?

Privett, George (School: Rio Rancho High School)

Crickets are a global source of nutrition for pets and humans alike. This will only increase as traditional agriculture faces increased challenges due to the advent of global warming. However, crickets have a fatal flaw: a short shelf life. To counter this, it was hypothesized that adding dietary supplements would positively affect their survival rate. By using ten different supplements matched specifically to crickets' biology in human-sized servings crushed into powder or squeezed into gel and then mixed into an oat and water mixture, the crickets' death rate was observed daily to determine if the supplements had any effect. A Chi-Squared Goodness of Fit test was performed to produce the findings. This project found that after both a two-week time period and a six-week time period there was no statistically significant positive effect between the control group and the experimental groups on survival rate. There was a statistically significant negative effect on four of the lowest performing groups (Sodium, Potassium, Phosphorus, and Vitamin A). Due to the lack of negative effect for the other six groups, further applications of "pre-supplementing" the crickets may be used to enrich their nutritional value without a negative effect on their already brief shelf life. This new "enriched" nutritional value may benefit populations that struggle with traditional agriculture. The project's findings require further research into the effectiveness of different concentrations of the six supplements that did not statistically change from the control group, as one may be found to be beneficial.

Awards Won: