CRICKET-BASED DIET FOR IMPROVED NUTRITION IN KENYA

Introduction

Prebiotic and probiotics which target the intestinal health, are currently an important segment of functional food market and have been associated with improved nutrition status. Information on the nutritional and chitin content of farmed cricket based on age, prebiotic potential of chitin, development of products and feeding children to ascertain the impact of the product on the nutritional status, and gut health of children in Kenya, will help in development of cricket based commercial products.

Objectives

- To determine the nutrient composition and chitin content of the farmed crickets based on their age.
- To extract and evaluate the efficacy of chitin as a prebiotic.
- To develop and assess the safety and consumer acceptability of cricket based products.
- To evaluate the nutritional status, cognitive function, and gut health of school going children.

Materials and methods

Cricket collection from JKUAT cricket farm, Jan-Feb 2016

Proximate analysis

Chitin analysis: content, fermentability, solubility, viscosity

Cohort

Nutritional status and stool data

Results obtained so far...

Nutrient composition of cricket with time: (A) Moisture, ash, crude fibre, Crude protein and crude fat; (B) Available carbohydrate and energy

Conclusion

- Cricket have high nutritional content, moisture content, ash content and fibre content remain almost constant as the cricket age.
- There is a decrease in available carbohydrate content as the cricket age increases.
- There is an increase in crude protein available as the cricket age increases.
- Available energy increases as the cricket age increases.
- Farmed cricket is a good source of energy and protein and therefore cricket based food should be adopted for future food security.

Developed product

Sample size: n = 112

Cohort of school going children in Uasin Gishu County
- Feeding 5 days a week: content meeting the daily recommended dietary requirements in children
- Baseline data collection and monthly for six months
- Finger prick: HB and dry spot for trans fatty acid analysis
- Height, Weight, BMI, MUAC and Acceptability

Inclusion criteria: Children aged 3 to 5 years

Exclusion criteria: Children allergic to any ingredients in the biscuit; Children whose parents do not consent to the study procedure

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