

Proximate Analysis, Protein and Amino Acid Characteristics of Teak Defoliator Pupa (*Hyblaea puera*)

Sekar Pranasti Siwi, Gemala Anjani*, Nuryanto, Choirun Nissa

ABSTRACT

Background: Malnutrition in Blora Regency was ranked 8th with 43 cases in Central Java. Teak defoliator pupa (*Hyblaea puera*) have a good nutritional content, which are commonly consumed by local people so it can be used to overcome nutritional problems although malnutrition in Blora was caused by infectious diseases, care practices and low socioeconomic status of the family.

Objective: To analyze moisture, ash, protein, fat and crude fiber content, protein and amino acid characteristics in fresh and floured teak defoliator pupa (*Hyblaea puera*).

Methods: Teak defoliator pupa were obtained from teak forests in Blora Regency, Central Java. Gravimetric method was used to determine moisture, ash and crude fiber content, protein content by micro-Kjeldahl method, fat content by soxhlet method, protein digestibility used in vitro method, protein quality used the EAAI (Essential Amino Acid Index) and PDCAAS (Protein Digestibility Corrected Amino Acid Score) method, while amino acid components used HPLC (High Performance Liquid Chromatography). The proximate content and protein digestibility data were analyzed by Mann-Whitney test. Protein quality and amino acid content are analyzed descriptively ($\alpha = 0,05$).

Results: The results of the proximate analysis showed that the highest water, ash and fat content was in fresh pupa (70,32%, 19,05%, and 5,30%), while the highest protein and crude fiber content was in floured pupa at 80.43% and 10,29%. Protein in fresh pupa has higher digestibility and quality. Fresh and floured pupa contain 9 essential amino acids and 6 non-essential amino acids with the highest levels of essential amino acid was leucine and the highest non-essential amino acid was tyrosine. The flouring process in teak defoliator pupa had no effect on proximate content and protein digestibility. ($p > 0,05$).

Conclusion: There is no difference in proximate content and protein digestibility between fresh and floured teak defoliator pupa. Amino acid content decreased after drying process.

Keywords: *Hyblaea puera*, proximate content, protein digestibility, protein quality, amino acid