

# 3rd International FOOD SCIENCE, PROBIOTICS, NUTRITION & MICROBIOME CONFERENCE November 28-29, 2019 | Kuala Lumpur, Malaysia

## Comparative Studies on Proximate, Mineral Composition and Functional Properties of Protein Isolates, Defatted and Raw Samples of *Gonimbrasiabelina* (Mopane Worm)

IdiatBolajoko Ogunyinka<sup>1\*</sup>, Foluso Oluwagbemiga Osunsanmi<sup>2</sup>, Michael ChukwukaOjo<sup>3</sup>, Nomali Z. Ngobese<sup>4</sup>, Unathi Kolanisi<sup>1</sup> and Andy R.Opoku<sup>3</sup>

<sup>1</sup>Department of Consumer Science, University of Zululand, South Africa

<sup>2</sup>Department of Agricultural Science, University of Zululand, South Africa

<sup>3</sup>Department of Biochemistry and Microbiology, University of Zululand, South Africa

<sup>4</sup>Department of Botany and Plant Biotechnology, University of Johannesburg, South Africa

High demand of foods globally is associated to the exponential increase of the world population. Conventional animals' protein source including, beef, chicken and others may be insufficient to meet this present need. Edible insect like *Gonimbrasiabelina* (mopane worm) showed great potential as alternative source of protein, especially for protein deficiency populace. This study aims to compare the proximate, mineral and functional composition of protein isolates, defatted and raw samples of mopane worm. The proximate, mineral composition and functional properties of the samples were determined using standard protocols. The result revealed variations in parameters investigated. The proximate analysis showed that protein isolate possessed the highest protein content (81.75 %), ash (5.17 %), crude fibre content (5.53 %) and lowest fat (0.36 %) and moisture (6.34 %) content, in comparison with other samples (defatted and raw). Similarly, the protein isolates also exhibited highest foam stability (64.38 %), foam capacity (24.39 %), swelling index (0.74), emulsion capacity (64.38 %) and lowest bulk density (0.13 %) in comparison with other samples. Interestingly, the protein isolates' also showed significant ( $p < 0.05$ ) better magnesium and potassium content than other samples. Therefore, the protein isolates could serve as a preferable remedy in the management of protein-energy malnutrition, as well as used in food fortification for the food industry. For future studies, anti-nutrient properties of samples need to be ascertained.

### Biography

Dr. Idiat Bolajoko Ogunyinka, is a Researcher at Department of Consumer Science, University of Zululand South Africa. Her area of specialization include; food biochemistry, medicinal plants, food security and clinical biochemistry. She has notable publication in reputable journals and presented in both local and international conferences. She is currently a member of South Africa Council of Natural Science Professional.

### Notes: