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Nutritional Profile of *Nomadacris Septemfasciata* and its Perspective Use to Fight Against Malnutrition in Madagascar

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Abstract

Biodiversity can contribute to the fight against chronic malnutrition in Madagascar. Edible insects are a resource potentially exploitable but mis-known by local consumers and stakeholders. The objective of this study is to explore the nutritional composition of *Nomadacris septemfasciata* and to discuss about its potential uses to enhance nutrition. *N. septemfasciata* is a species available in large quantities during the hot and humid season in the highlands of Madagascar. Analysis shows that the protein content of *N. septemfasciata* is the highest among Orthoptera orders, 77.46 % of dry matter. It contains all essential amino acids, with an amino acid score in accordance with the FAO / WHO / UNU recommendation except for methionine. The high tryptophan content 6.17 g / 100g of protein makes possible to use this insect as supplement to foods limited in this amino acid, such as rice and tubers, which are the staple food of Malagasy people. The lipid fraction represents 8.46 % of the dry matter with 14 fatty acids and the dominance of palmitic acid at 23.4 %, arachidic acid at 14.9 %, and 10.8 % -linolenic acid. *N. septemfasciata* powder contains a good omega 3 content 10.8 g / 100g of fat. Similar in content to cod liver oil, fish oil and walnut oil. The content of iron 9.99 ± 1.00 mg / 100g and zinc 21.16 ± 1.90 g / 100g makes it a potential source of mineral which can be used for food enrichment. Adding *N. septemfasciata* powder to the daily ration can contribute to improve Malagasy diet quality, proteins and micronutrients intakes.

Keywords: Amino acids, edible insect, fatty acids micronutrients , *nomadacris septemfasciata*, protein