

Protein Isolate of Cumaru [*Amburana cearensis* (ALLEMAO) A. C. SMITH] as an Alternative Protein Source for Improvement of Human Nutrition

Freire, G.P.; Sousa, N. M.; Moreira, T. B.; Rocha-Bezerra, L. C. B.; Lopes Neto, J.J.;
Carvalho, A.F.U.; Vasconcelos, I. M.

Department of Biochemistry and Molecular Biology, Federal University of Ceará,
Fortaleza, CE, Brazil

INTRODUCTION: *Amburana cearensis*, known as cumaru, is an underexploited legume species from Caatinga vegetation with high nutritional potential seeds. Plant proteins have been studied as alternative sources of high quality proteins. In this context, development of protein isolates appears as a promising strategy to improve human nutrition. **OBJECTIVES:** This study aimed to develop a protein isolate (NPIAC) based on seeds of *A. cearensis* and evaluate its nutritional composition and acute toxicity upon mice. **MATERIAL AND METHODS:** NPIAC was obtained by isoelectric precipitation followed by spray drying. Protein extraction was performed in different conditions of pH (7-10), solution (H₂O and 0.1-0.5 M NaCl), time (20-60 min) and proportion (1:10, 1:20 and 1:30, meal:solvent). For protein precipitation, a range of pH (2.5-6.5) was tested. These parameters were combined into several experiments in order to establish the best condition to obtain NPIAC. Nutritional composition and acute toxicity of NPIAC were evaluated according to AOAC (1997) and protocol 420 (OECD), respectively. Commercial protein isolate from soybean (IPS) was used for comparison. **RESULTS AND DISCUSSION:** NPIAC was obtained by extraction with distilled water, pH 9.0, 1:20 (w/v) for 20 min, followed by protein precipitation at pH 4.5. Under these conditions, yield was 84.05% (g NPIAC/ g seed protein). Regarding nutritional composition of NPIAC and IPS, the results obtained were, respectively: 94.57±0.87% and 83.74±2.7% (protein); 0.37±0.03% and 0.43±0.01% (lipid) and 2.11±0.07% and 3.75±0.03% (ash). According to these, NPIAC appears to be as good as IPS in terms of nutritional composition and protein quality. Acute toxicity assay showed no alterations between animals administered with NPIAC and those who received IPS or saline. **CONCLUSIONS:** The protein isolate based on *A. cearensis* seeds presents high nutritional potential and shows no signs of toxicity. This is a noteworthy bioproduct, which brings attention to the richness of underexploited Caatinga.

Keywords: Protein isolate. *Amburana cearensis*. Novel foods.

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