

ACUTE TOXICITY EVALUATION CAUSED BY CUPUAÇU NIBS
SUPPLEMENTATION IN *Drosophila melanogaster*

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INTRODUCTION: Parkinson's Disease (PD) is characterized by the progressive neurodegeneration of dopaminergic neurons in the substantia nigra of the midbrain, resulting in a deficit in the production of dopamine, a neurotransmitter crucial for motor control. PD represents a growing challenge, especially in the face of an aging population and the progressive loss of dopaminergic neurons, which significantly compromises the quality of life of patients. Given the absence of curative therapies, there is increasing interest in natural products with antioxidant and neuroprotective properties. Cupuaçu nibs are rich in bioactive compounds, but data on their toxicological safety are still scarce. Thus, *Drosophila melanogaster* is a promising model for preliminary toxicological assays, given its genetic homology with humans and ease of handling.

OBJECTIVE: To perform a dose-response curve to establish the safe concentration of cupuassu nibs for the treatment of *Drosophila melanogaster*. **MATERIAL AND METHODS:** To determine the concentration of Cupuaçu, an evaluation of the concentration of Cupuaçu lethal to 50% of the flies (LC50) was performed. The flies were divided into groups that received for 72h food supplemented with different percentages of Cupuaçu of 1%, 3%, 5%, 10%, 20%, and 50% in the standard diet. The treatment groups contained 50 flies each, and 4 independent experiments were performed (n=4). At the end of the 72h on an *ad libitum* diet, the number of dead flies was counted.

For the evaluation of the toxicological curve, *Drosophila melanogaster* of both sexes, up to 5 days old, were used, with 50 animals per group and allocated in vials containing different percentages of cupuassu nibs 1%, 3%, 5%, 10%, 20%, and 50% in the standard diet. **RESULTS AND CONCLUSION:** It was observed that the 50% concentration was lethal to 100% of the animals.

The 25% concentration caused approximately 50% mortality, characterizing it as the LC50. Lower concentrations (1%, 3%, 5%, and 10%) were considered non-lethal. These data suggest that the cupuassu nibs extract exhibits concentration-dependent toxicity and reinforce the need for prior toxicological evaluations before the use of natural products. The non-lethal concentrations will be used in future functional assays.