Tucum Mirim Oil (Astrocaryum acaule): Evaluation of Its Potential as Repellent Conveyed to an Experimental Model in vitro

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Diseases caused by insects are a public health problem, especially in tropical regions. From this perspective, there is tucum mirim (Astrocaryum acaule Mart.), a typical fruit from the cerrado region, widely used in the region as an ointment in the prevention and treatment of insect bites. Thus, the research aimed to analyze the biochemical and physiological mechanisms of the pulp and almond oil of tucum mirim (Astrocaryum acaule Mart.), regarding the presence of bioactive compounds, repellent, and healing action for application in insect bites. In natural pulp oil and almond oil, determinations of chemical composition, physicochemical, and quantification of the active principles were carried out. In the physicochemical composition of 100g of fresh pulp and 100g of dry pulp were found, respectively, proteins (3.54% to 3.79%), lipids (23.63% to 26.98%) and crude fiber (11.93% and 12.01%). In 100ml of the oil, total flavonoids (718.25mg), yellow flavonoids (43.31mg), total anthocyanins (79.16mg), Vitamin C (72.46mg), Carotenoids and Beta-carotene (0.18mg) were found. In the in vitro tests to evaluate the therapeutic capacity, different tests were carried out, whose findings confirmed that the pulp oil reduces the redness of insect bites by up to 20% in 3 hours; and 100% after 36 hours. Almond oil dissolved 100% of the redness of wasp, tick, and mosquito stings in 12 hours. In vitro tests to prove the repellent capacity of the fruit oil showed that in 50 min, the pulp oil repelled 100% of the insects present, while the almond oil repelled 80%. These results can contribute to direct measures of established programs about health surveillance, especially in view of the scenario of pathologies caused by arthropods in tropical regions.

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