AN INVESTIGATORY PROJECT OF LANZONES (LANSIUM DOMESTICUM) PEEL AS A MOSQUITO COIL

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ABSTRACT

Mosquito-borne diseases remain a significant public health concern, particularly in tropical and subtropical regions. This study investigated the potential of Lanzones (Lansium domesticum) peels as a natural and sustainable ingredient in the formulation of mosquito coils. The research aimed to develop an effective alternative to conventional mosquito coils, which often contain synthetic chemicals that pose health and environmental risks. By utilizing fruit waste as a primary component, the study promotes both environmental sustainability and public safety, offering a chemical-free, eco-friendly solution for mosquito control. This study utilized an experimental research design combined with a purposive sampling technique to select respondents. A survey questionnaire served as the primary instrument to assess the acceptability of the Lanzones peel mosquito coil based on key factors: ingredients and formulation procedure, mosquito repellency, usability, coverage effectiveness, and toxicity. Data were analyzed through frequency and percentage distributions, weighted means, and t-tests to evaluate whether significant differences existed between the assessments of the two respondent groups. The investigation results show that the Lanzones peel mosquito coil was rated as "Acceptable" in terms of ingredients and procedure, mosquito repellency, usability, coverage, and toxicity. The Chemists gave an overall weighted mean of 3.14 with a variance of 0.228, a t-computed value of 1.588, and 326 degrees of freedom, compared to a t-critical value of 2.030 ($\alpha = 0.05$). The Chemistry Teachers rated the coil with a weighted mean of 2.55, variance of 0.448, and a t-computed value of 0.7 with the same degrees of freedom and critical value. Since both groups' t-computed values are less than the critical value, no significant difference was found between their assessments. Therefore, the product's acceptability is supported by both groups. Lanzones peel mosquito coil was deemed acceptable and effective as a natural mosquito repellent. However, several improvements were recommended to enhance its performance. Respondents advised reducing the charcoal content to better highlight the natural scent of Lanzones peel. The incorporation of gum as a binder was suggested to improve the coil's consistency and appearance. Additionally, enhancing the coil's combustibility was recommended to extend its burning time and mosquito-repelling effectiveness. Adjustments to the coil's formulation were also proposed to improve its ignition and burning quality, while ensuring that Lanzones peel remains the primary ingredient to maintain its repellent properties.

RECOMMENDED CITATION

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