

ABSTRACT

PHYSICAL STABILITY TEST OF SUNSCREEN CREAM FORMULA USING NANOENCAPSULATION OF PURPLE SWEET POTATO LEAF EXTRACT

(*Ipomoea batatas* L.) ANTIIN-3 VARIETY

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Sunscreen cream is a cosmetic preparation that can help protect the skin from sunlight, the active ingredient used is Antin-3 leaves. Antin-3 leaves are known to contain flavanoids that have the ability as antioxidants, so this study used Antin-3 leaf sunscreen cream. The aim of this study was to determine the concentration of Antin-3 leaf nanoencapsulation providing stability to sunscreen cream. The concentration of nano Antin-3 was 0.3 : 0.6 : 0.9 [F1:F2:F3], then physical stability was carried out including freeze-thaw and mechanical tests. Spreadability and pH data were analyzed using SPSS Dependent (value $\alpha = 0.05$). The results of observations of Antin-3 leaf sunscreen cream appeared brownish white in color, soft in texture, and had a distinctive aroma, homogeneous, type of cream M/A, spreadability 4.47 cm - 7.77 cm, pH 5.54-5.87. Scatterability test sig < 0.05 in Formula II the data were not normally distributed and in the pH test in Formula II sig > 0.05 there was no significant difference between the start and end. The conclusion of the freeze thaw stability test has changed in formula 1 and formula 3 in the pH and spreadability tests. In the mechanical test, there was no separation of the water phase from the oil phase, but there was a separation between the active ingredients and the cream base.

Keywords: *Sunscreen cream, Antin-3 leaf nanoencapsulation, freeze thaw and mechanics.*