ABSTRACT

SUNSCREEN ACTIVITY TEST OF EMULGEL NANOENCAPSULATION OF PURPLE SWEET POTATO LEAF EXTRACT (Ipomoea batatas L.) VARIETY ANTIN-3 (SPF Value Test)

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Sunlight is essential for the survival of all living things, but overexposure can be harmful to the skin as the ultraviolet (UV) rays emitted can cause erythema, pigmentation and even skin cancer. Sunscreens, such as emulgels, can be applied evenly on the surface of the skin to protect against these negative effects, with the effectiveness of the protection measured by the SPF (Sun Protection Factor) value, which indicates the time it takes for erythema to occur. Natural ingredient that can be used for UV protection is purple sweet potato. The 70% ethanol extract of purple sweet potato leaves (Ipomoea batatas L.) variety Antin-3 contains 4.83% polyphenols and 16.98% flavonoids. The extract of Antin-3 leaves is nanoencapsulated to protect the polyphenol and flavonoid contents within. Nanocapsulation is the process of coating or wrapping a substance as a core material or active substance with a polymer film with a size between 1 nm and 1000 nm. This study aims to determine the difference in concentration variations of 0.3%, 0.6%, 0.9% affecting the SPF value obtained using the UV-Vis spectrophotometer method. Absorbance results were obtained to calculate the SPF value. The SPF value at a concentration of 0.3% is 21.03, at a concentration of 0.6% it is 38.01 and at a concentration of 0.9% it is 38.29. The difference in concentration variation is 0.3%; 0.6%; 0.9% affects the SPF value. The results of this study indicate that the nanoencapsulated extract of Antin-3 leaves has the highest SPF at a concentration of 0.9%.

Keywords : *SPF Value Test, Ipomoea batatas* L *Antin-3, Sunscreen*