

ABSTRACT

FREEZE THAW STABILITY TEST FOR PEEL OFF GEL MASK PREPARATION COCONUT COIR EXTRACT (*Cocos nucifera* L.) (With Carbopol 940 as Gelling Agent)

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Coconut coir contains tannins which can be used as an antibacterial. To make peel-off gel masks from natural ingredients, stability needs to be considered. Stability is defined as the ability of a product or preparation to survive within specified limits during the storage period, its properties and characteristics must be the same as when the preparation was first made. In order to obtain a preparation that is stable in storage and in a short time, an accelerated stability test can be carried out for 6 cycles with a storage temperature of 4°C and 40°C. The purpose of this study was to determine the resistance of peel-off gel mask preparations to the effects of extreme storage temperatures. This peel-off gel mask uses variations of three concentrations of carbomer as a gelling agent, namely 0,75%, 1%, and 1,25%. Evaluations carried out before and after the stability test in cycle 0 (S0) and cycle 6 (S6) included organoleptic, pH, dry time, spreadability, and homogeneity. In this study, the stability test results showed that there was no significant difference before and after freeze-thaw in organoleptic and homogeneity tests. However, there were real differences in changes in pH, spreadability and drying time after the freeze-thaw test. The pH test results were obtained (F1 = S0: 5.47 ± 0.01; S6: 5.28 ± 0.03), (F2 = S0: 5.20 ± 0.05 ; S6: 5.07 ± 0.03), and (F3 = S0: 5.18 ± 0.06 ; S6: 4.86 ± 0.02). Significant values in the pH test (F1=0.002), (F2=0.005), and (F3=0.006), Spreadability test results (F1 = S0: 6.4 cm ± 0.1 ; S6: 5.9 cm ± 0.1), (F2 = S0: 6.4 cm ± 0.1 ; S6: 5.5 cm ± 0.1), and (F3 = S0: 5.5 cm ± 0.1 ; S6: 5.1 cm ± 0.15) significant values were obtained in the spreadability test (F1=0.013), (F2=0.004), and (F3=0.038), dry time test results (F1 = S0: 21.17 minutes ± 0.02; S6: 17.23 minutes ± 0.08), (F2 = S0: 20.31 minutes ± 0.04 ; 17.05 minutes ± 0.04), and (F3 = S0: 19.35 minutes ± 0.05 ; S6: 16.05 minutes ± 0.04) as well as significant values in the dry time test (F1, F2, and F3=0.000), so it can be concluded that storage temperature can affect the stability of peel-off gel mask preparations of coconut coir extracts.

Keywords : Carbopol 940, coconut coir extracts, freeze thaw, stability.