

**PENGARUH KONSENTRASI EKSTRAK METANOL BIJI PEPAYA
(*Carica pepaya* L) TERHADAP AKTIVITAS ANTIOKSIDAN DALAM
SEDIAAN MASKER GEL *PEEL-OFF* DENGAN METODE ABTS**

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INTISARI

Latar Belakang: Biji pepaya memiliki potensi sebagai sumber antioksidan yang dapat dikembangkan menjadi produk kosmetik seperti masker gel *peel-off*. Metode ABTS dipilih untuk mengukur aktivitas antioksidan karena sensitivitasnya yang tinggi dan ketahanan terhadap berbagai level pH.

Tujuan Penelitian: Mengetahui pengaruh variasi konsentrasi ekstrak metanol biji pepaya terhadap sifat fisik sediaan masker gel *peel-off* dan aktivitas antioksidan.

Metode Penelitian: Ekstrak metanol biji pepaya diperoleh melalui metode maserasi kemudian dilakukan karakterisasi ekstrak. Ekstrak metanol biji pepaya diformulasikan menjadi masker gel *peel-off* dengan variasi konsentrasi ekstrak F1 0,25%, F2 0,5%, dan F3 0,75%. Masker gel *peel-off* diuji sifat fisiknya meliputi uji organoleptis, homogenitas, pH, daya sebar, daya lekat, waktu mengering, dan uji iritasi. Uji aktivitas antioksidan menggunakan metode ABTS.

Hasil Penelitian: Evaluasi sifat fisik pada uji organoleptis masker gel *peel-off* F1, F2, F3 menunjukkan ketiga formula memiliki warna kuning pucat, tekstur kental dan tidak berbau. pH masker gel *peel-off* berturut-turut yaitu 5, 5, dan 6. Daya sebar masker gel *peel-off* berturut-turut yaitu $6,36 \pm 0,05$, $6,22 \pm 0,10$ dan $6,09 \pm 0,03$. Daya lekat masker gel *peel-off* berturut-turut yaitu $11,17 \pm 0,65$, $11,94 \pm 0,72$, dan $12,83 \pm 0,87$. Waktu mengering masker gel *peel-off* berturut-turut yaitu $24,70 \pm 0,49$, $23,93 \pm 0,87$, dan $22,50 \pm 0,75$. Hasil uji iritasi menunjukkan tidak ada iritasi yang terjadi. Hasil nilai IC_{50} kuersetin sebesar $13,152 \text{ ppm} \pm 0,68$. Hasil penelitian nilai IC_{50} ekstrak metanol biji pepaya $96,569 \text{ ppm} \pm 2,65$. Hasil nilai IC_{50} sediaan masker gel *peel-off* F1, F2, dan F3 berturut-turut yaitu $165,599 \text{ ppm} \pm 8,267$, $153,337 \text{ ppm} \pm 1,289$, dan $149,187 \text{ ppm} \pm 0,68$.

Kesimpulan: Variasi konsentrasi ekstrak metanol biji pepaya memengaruhi sifat fisik dan aktivitas antioksidan gel *peel-off*, dengan IC_{50} terbaik pada F3, yang menunjukkan potensi sebagai antioksidan sedang.

Kata kunci: ekstrak metanol biji pepaya, antioksidan, masker gel *peel-off*, ABTS

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THE EFFECT OF METHANOL EXTRACT CONCENTRATION FROM PEPAYA SEEDS (*Carica pepaya L*) ON ANTIOXIDANT ACTIVITY IN PEEL-OFF GEL MASK FORMULATIONS USING THE ABTS METHOD

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ABSTRACT

Background: Pepaya seeds have potential as a source of antioxidants that can be developed into cosmetic products, such as peel-off gel masks. The ABTS method was selected to measure antioxidant activity due to its high sensitivity and stability across various pH levels.

Objectives: This study aims to determine the effect of varying concentrations of pepaya seed methanol extract on the physical properties of peel-off gel formulations, the ABTS radical scavenging activity, and the IC₅₀ value of the peel-off gel masks containing pepaya seed methanol extract.

Methodology: This research employs an experimental method. The methanol extract of pepaya seeds was obtained through maceration, followed by extract characterization, including organoleptic tests, moisture content analysis, and phytochemical screening. The methanol extract of pepaya seeds was formulated into peel-off gel masks with extract concentrations of 0.25%, 0.5%, and 0.75%. The physical properties of the peel-off gel masks were tested, including organoleptic tests, homogeneity, pH, spreadability, adhesion, drying time, and irritation tests. Antioxidant activity was measured to determine the IC₅₀ value using the ABTS method. All data were presented in tabular form and statistically analyzed.

Results: The variation in the concentration of pepaya seed methanol extract significantly affected the physical properties of the peel-off gel and the ABTS radical scavenging activity. Higher concentrations enhanced antioxidant activity, with the best IC₅₀ value at 0.75% concentration (149.187 ppm), which is considered moderate as an antioxidant.

Conclusion: The variation in the concentration of pepaya seed methanol extract influences the physical properties and antioxidant activity of the peel-off gel, with the best IC₅₀ at a concentration of 0.75% (149.187 ppm), indicating potential as a moderate antioxidant.

Keywords: methanol extract of pepaya seeds, antioxidant, peel-off gel mask, ABTS

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