

INTISARI

GANWARIN, M,D,P., 2025, FORMULASI DAN UJI AKTIVITAS ANTIOKSIDAN MASKER GEL *PEEL OFF* EKSTRAK ETANOL BERAS HITAM (*Oryza sativa* L. Indica) DENGAN *POLYVINYL ALCOHOL* SEBAGAI PEMBENTUK *FILM* LAPIS TIPIS, SKRIPSI, PROGRAM STUDI S1 FARMASI, UNIVERSITAS SETIA BUDI SURAKARTA, Dibimbing oleh Dr. Supriyadi, M.Si dan apt. Anita Nilawati, M.Farm.

Radikal bebas dapat memicu kerusakan kulit seperti penuaan dini, kulit kusam, dan muncul flek hitam. Beras hitam mengandung antosianin, tokoferol, tokotrienol, serta senyawa fenolik seperti polifenolat, flavonoid, alkaloid, dan tannin sebagai antioksidan dan efektif dalam melawan radikal bebas. Penelitian ini dilakukan untuk menilai kualitas fisik dan stabilitas sediaan masker gel *peel-off* ekstrak etanol dari beras hitam (*Oryza sativa* L. Indica) dengan berbagai konsentrasi polivinil alkohol, serta mengevaluasi aktivitas antioksidan sediaan tersebut.

Beras hitam diekstraksi dengan pelarut etanol 96% dengan ekstraksi maserasi. Ekstrak etanol beras hitam diformulasikan menjadi 3 formula dengan variasi konsentrasi polivinil alkohol 10%, 11%, 12%, dan satu kontrol negatif. Formulasi masker gel *peel-off* ekstrak etanol beras hitam diuji untuk mengetahui parameter mutu fisik, stabilitas sediaan, serta aktivitas antioksidan menggunakan metode DPPH, dengan perhitungan nilai IC_{50} sebagai tolok ukur kemampuan menangkal radikal bebas. Seluruh data dianalisis secara statistik melalui uji *One Way* ANOVA.

Hasil penelitian menunjukkan bahwa seluruh formula masker gel *peel-off* ekstrak etanol beras hitam memenuhi parameter mutu fisik. Formula dengan konsentrasi PVA 11% memberikan hasil karakteristik fisik terbaik dan nilai IC_{50} sebesar 48 ppm. Uji statistik *One Way* ANOVA menunjukkan tidak signifikan antar formula, menegaskan bahwa konsentrasi PVA berpengaruh terhadap mutu fisik dan efektivitas sediaan.

Kata kunci : Antioksidan, beras hitam, masker gel *peel-off*, PVA, DPPH, *One Way* ANOVA

ABSTRACT

GANWARIN, M,D,P., 2025, FORMULATION AND TEST OF ANTIOXIDANT ACTIVITY OF PEEL OFF GEL MASK OF ETHANOL EXTRACT OF BLACK RICE (*Oryza sativa* L. Indica) WITH POLYVINYL ALCOHOL AS A THIN FILM FORMER, THESIS, S1 PHARMACY STUDY PROGRAM, SETIA BUDI UNIVERSITY SURAKARTA, Supervised by Dr. Supriyadi, M.Si and apt. Anita Nilawati, M.Farm.

Free radicals can trigger skin damage such as premature aging, dull skin, and dark spots. Black rice contains anthocyanins, tocopherols, tocotrienols, and phenolic compounds such as polyphenols, flavonoids, alkaloids, and tannins as antioxidants and are effective in fighting free radicals. This study was conducted to assess the physical quality and stability of the peel-off gel mask preparation of ethanol extract from black rice (*Oryza sativa* L. Indica) with various concentrations of polyvinyl alcohol, and to evaluate the antioxidant activity of the preparation.

Black rice was extracted with 96% ethanol solvent by maceration extraction. The ethanol extract of black rice was formulated into 3 formulas with variations in polyvinyl alcohol concentrations of 10%, 11%, 12%, and one negative control. The formulation of the black rice ethanol extract peel-off gel mask was tested to determine the parameters of physical quality, stability of the preparation, and antioxidant activity using the DPPH method, with the calculation of the IC₅₀ value as a benchmark for the ability to ward off free radicals. All data were analyzed statistically through the One Way ANOVA test.

The results showed that all formulas of black rice ethanol extract peel-off gel mask met the physical quality parameters. The formula with a PVA concentration of 11% gave the best physical characteristics and an IC₅₀ value of 48 ppm. The One Way ANOVA statistical test showed significant differences between formulas, confirming that the PVA concentration affected the physical quality and effectiveness of the preparation.

Keywords: Antioxidan, black rice, *peel-off* gel mask, PVA, DPPH, *One Way* ANOVA