

## INTISARI

Masker sering digunakan untuk merawat dan mencegah kerusakan kulit wajah seperti penuaan akibat radikal bebas. Masker gel *peel off* merupakan masker yang praktis digunakan karena dapat diangkat setelah kering tanpa perlu dibilas. Aktivitas radikal bebas dapat dihambat oleh senyawa antioksidan. Daun binahong (*Anredera cordifolia*) mengandung senyawa polifenol yang diketahui memiliki sifat sebagai antioksidan. Penelitian ini bertujuan untuk menentukan formula optimum masker gel *peel off* daun binahong dan uji aktivitas antioksidan setelah penyimpanan.

Masker gel *peel off* dibuat dengan mengombinasikan PVA, CMC-Na, dan natrium alginat sebagai *gelling agent*. Karakteristik dari masker gel *peel off* daun binahong dioptimasi menggunakan *Simplex Lattice Design* menggunakan *Design Expert* versi 13 untuk memperoleh formula optimum. Aktivitas antioksidan diukur menggunakan metode DPPH dengan spektrofotometer UV-Vis. Parameter yang dihitung adalah %inhibisi dan IC<sub>50</sub>.

Berdasarkan hasil penelitian didapatkan formula optimum yang terdiri dari air rebusan daun binahong 5% (b/v), PVA 3,5 g, natrium alginat 1,5g, propilen glikol 5 g, dan kalium sorbat 0,1 g. Formula optimum memiliki daya sebar  $9,2 \pm 0,21$  cm, daya lekat  $1,09 \pm 0,33$  detik, viskositas  $1491,67 \pm 10,78$  cP, pH  $7,21 \pm 0,02$ , waktu mengering  $68 \pm 6,24$  menit, *tensile strength*  $1,792 \pm 0,25$  MPa, dan elongasi  $68,077\% \pm 1,14$ . Karakteristik formula optimum masker gel *peel off* daun binahong tidak berbeda signifikan selama 4 minggu penyimpanan. Masker gel *peel off* daun binahong memiliki %inhibisi antioksidan sebesar 55,087% yang tergolong efektif dalam menghambat aktivitas radikal bebas.

**Kata kunci:** antioksidan, daun binahong, masker gel *peel off*

## ABSTRACT

Masks are often used to treat and prevent skin damage such as aging due to free radicals. The peel off gel mask is a mask that is practical to use because it can be removed after drying without need to rinse. Free radical activity can be inhibited by antioxidant compounds. Binahong leaves (*Anredera cordifolia*) contain polyphenolic compounds which are known to have antioxidant properties. This study aims to determine the optimum formula for binahong leaf peel-off gel masks and test the antioxidant activity after storage.

Peel off gel masks are made by combining PVA, CMC-Na, and sodium alginate as gelling agents. The characteristics of the binahong leaf peel off gel mask were optimized using Simplex Lattice Design using Design Expert version 13 to obtain the optimum formula. Antioxidant activity was measured using the DPPH method with a UV-Vis spectrophotometer. The calculated parameters are %inhibition and IC<sub>50</sub>.

Based on the results of this study, the optimum formula was obtained which consisted of 5% (w/v) binahong leaf decoction, 3,5 g PVA, 1,5 g sodium alginate, 5 g propylene glycol, and 0,1 g potassium sorbate. The optimum formula has a spreadability of  $9,2 \pm 0,21$  cm, adhesion of  $1,09 \pm 0,33$  seconds, viscosity of  $1491,67 \pm 10,78$  cP, pH of  $7,21 \pm 0,02$ , drying time of  $68 \pm 6,24$  minutes, tensile strength of  $1,792 \pm 0,5$  MPa, and elongation of  $68,077\% \pm 1,14$ . The optimum characteristics of the binahong leaf peel off gel mask formula were not significantly different during 4 weeks of storage. The binahong leaf peel off gel mask has an inhibition of 55,087%, which is considered effective in inhibiting free radical activity.

**Keywords:** peel off gel mask, binahong leaves, antioxidants