

## ABSTRAK

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Judul : Potensi gel ekstrak delima merah (*Punica granatum l*) dengan konsentrasi 10%, 20% dan 30% sebagai bahan pemutih gigi.

Warna gigi sangat penting bagi mayoritas masyarakat sehingga perubahan warna dapat mempengaruhi kualitas hidup. Perubahan warna atau diskolorasi disebabkan oleh faktor intrinsik dan faktor ekstrinsik. Faktor ekstrinsik yang utama adalah makanan atau minuman (kopi, teh dan soda). *Bleaching* merupakan suatu prosedur pemutihan kembali gigi yang mengalami perubahan warna. *Bleaching* memiliki efek negatif diantaranya seperti sensitivitas dan iritasi gingiva sehingga dikembangkan bahan alami untuk mengatasi perubahan warna. Kandungan asam malat dan asam elegat pada buah stroberi yang berpotensi sebagai alternatif bahan *bleaching*. Asam malat dan asam elegat juga terdapat pada buah delima. Tujuan penelitian ini untuk mengetahui potensi gel ekstrak delima merah dengan konsentrasi 10%, 20% dan 30% sebagai bahan pemutih gigi dan tinjauannya menurut Islam. Metode penelitian yaitu eksperimental laboratoris *pre-test post-test with control group design*. Sampel yaitu 25 gigi premolar. Sampel direndam dalam larutan kopi selama 7 hari kemudian pengukuran menggunakan colorimeter, metode CIEL\*a\*b\*, kemudian dibagi menjadi 5 kelompok perlakuan. Masing-masing kelompok diaplikasikan gel ekstrak delima merah konsentrasi 30%, 20% dan 10%, karbamid peroksida 10% (kontrol positif) dan aquadest (kontrol negatif). Pengukuran warna kemudian dilakukan pada 7 dan 14 hari. Hasil penelitian terdapat perbedaan yang signifikan pada konsentrasi 30% dan 20%. Berdasarkan hasil uji post hoc gel ekstrak delima merah 20% lebih efektif dibandingkan dengan konsentrasi lain. Dalam pandangan Islam gel ekstrak delima merah dengan konsentrasi 20% dan 30% terbukti efektif sebagai bahan *bleaching* pada gigi, penggunaannya diperbolehkan. Berdasarkan kaidah fikih *segala sesuatu boleh digunakan sampai ada dalil yang mengharamkannya*.

**Kata kunci:** *bleaching*; delima merah, warna gigi.

## ABSTRACT

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Judul : The potential of red pomegranate extract gel (*Punica granatum* Linn) with concentrations of 10%, 20% and 30% as teeth whitening ingredients

Tooth color is very important for the majority of people so that changes in color can affect quality of life. Discoloration can be caused by intrinsic and extrinsic factors. The main extrinsic factor is food or drink (coffee, tea and soda). Bleaching is a tooth whitening procedure that can change the color of the tooth. Bleaching has negative effects, such as gingival sensitivity and irritation. Because of those reasons natural ingredients are being developed to deal with discoloration. The content of malic acid and eletic acid in strawberries has the potential as an alternative bleaching material. Malic acid and eletic acid are also found in pomegranates. The purpose of this study was to determine the potential of red pomegranate extract gel with concentrations of 10%, 20% and 30% as teeth whitening ingredients and its review according to Islam. This study was using an experimental laboratory pre-test post-test with control group design. Samples were 25 premolar teeth. The sample was immersed in coffee solution for 7 days then measured using a colorimeter, CIEL \* a \* b \* method, then divided into 5 treatment groups. Each group was applied red with pomegranate extract gel concentration of 30%, 20% and 10%, carbamide peroxide 10% (positive control) and aquadest (negative control). Color measurements were then carried out at 7 and 14 days. The results of this study is there was a significant differences in the concentration of 30% and 20%. Based on the post hoc test results red pomegranate extract gel with concentration of 20% is more effective compared to other concentrations. From the Islamic view, red pomegranate extract gel with concentration of 20% and 30% can be used as an alternative material for tooth bleaching, and its use is permitted. Based on the principles of fiqh everything can be used until there is an argument forbidding it.

**Keywords:** bleaching; red pomegranate, tooth color