

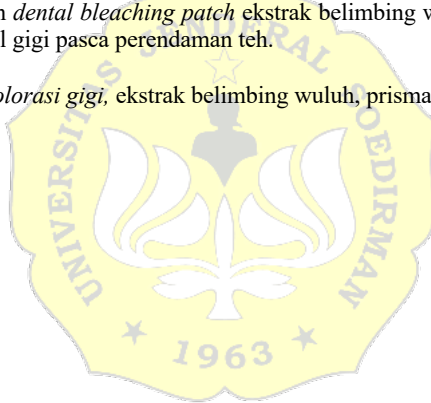
ABSTRAK

PENGARUH *DENTAL BLEACHING PATCH* EKSTRAK BELIMBING WULUH (*Averrhoa bilimbi* L.) TERHADAP PERUBAHAN WARNA DAN PRISMA ENAMEL GIGI PASCA PERENDAMAN TEH

Sabrina Febita Cahyarani

Diskolorasi gigi merupakan salah satu masalah dalam bidang kedokteran gigi. Salah satu prosedur untuk meningkatkan kecerahan warna gigi adalah *dental bleaching*. Prosedur *dental bleaching* melibatkan penggunaan bahan aktif yang dapat menimbulkan dampak negatif pada rongga mulut. Belimbing wuluh berpotensi menjadi salah satu alternatif bahan alam untuk *dental bleaching* karena dapat memutihkan warna gigi. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *dental bleaching patch* ekstrak belimbing wuluh (*Averrhoa bilimbi* L.) terhadap perubahan warna dan prisma enamel gigi pasca perendaman teh. Jenis penelitian ini adalah *true experimental* laboratoris secara *in vitro* dengan *pretest-posttest control group design*. Sampel sebanyak 40 gigi premolar dibagi menjadi 6 kelompok perlakuan *dental bleaching patch* ekstrak belimbing wuluh 20%, 40%, 60% (P1,P2,P3), kontrol positif hidrogen peroksida 5,25% (KP), dan kontrol negatif tanpa perlakuan apapun (KN). Tiap kelompok terbagi menjadi dua durasi perlakuan yaitu 7 hari dan 14 hari. Sampel dilakukan pengamatan sebelum dan sesudah perlakuan menggunakan *shade guide* dan CIELab, serta dilakukan uji SEM setelah perlakuan. Data dianalisis menggunakan uji *Kruskal Wallis* dilanjutkan Uji *Post-Hoc Mann Whitney*. Hasil uji *Kruskal Wallis* menunjukkan terdapat perbedaan signifikan ($p < 0,05$) rerata kecerahan dan intensitas warna gigi metode *shade guide* dan CIELab antar kelompok. Hasil uji *Post-Hoc Mann Whitney* menunjukkan terdapat perbedaan signifikan ($p < 0,05$) antar kelompok perlakuan dan kelompok kontrol negatif pada kedua durasi perlakuan yaitu 7 hari dan 14 hari. Hasil uji SEM menunjukkan mikrostruktur prisma enamel paling baik pada kelompok perlakuan 20% dan kontrol negatif pada kedua durasi yaitu 7 hari dan 14 hari. Simpulan penelitian ini adalah terdapat pengaruh pemberian *dental bleaching patch* ekstrak belimbing wuluh (*Averrhoa bilimbi* L.) terhadap perubahan warna dan prisma enamel gigi pasca perendaman teh.

Kata Kunci: *bleaching patch*, *diskolorasi gigi*, ekstrak belimbing wuluh, prisma enamel



ABSTRACT

EFFECT OF DENTAL BLEACHING PATCH FROM BELIMBING WULUH EXTRACT (*Averrhoa bilimbi* L.) ON COLOR CHANGES AND PRISM OF TOOTH ENAMEL AFTER SOAKING IN TEA

Sabrina Febita Cahyarani

*Tooth discoloration is one of the problems in dentistry. One procedures to improve the brightness of tooth color is dental bleaching. Dental bleaching procedures involve the use of active ingredients that can have negative effects on the oral cavity. Belimbing wuluh has the potential to be an alternative natural ingredient for dental bleaching because it can whiten teeth color. This study aims to determine the effect of giving a dental bleaching patch of belimbing wuluh (*Averrhoa bilimbi* L.) extract on changes in color and prism of tooth enamel after tea soaking. This type of research is a true experimental laboratory in vitro with a pretest-posttest control group design. A sample of 40 premolar teeth was divided into 6 treatment groups of 20%, 40%, 60% dental bleaching patch of belimbing wuluh extract (P1, P2, P3), 5.25% hydrogen peroxide as positive control (KP), and negative control without any treatment (KN). Each group was divided into two treatment durations, namely 7 days and 14 days. The samples were observed before and after treatment using shade guide and CIELab, and SEM test was carried out after treatment. Data were analyzed using the Kruskal Wallis test followed by the Mann Whitney Post-Hoc Test. The Kruskal Wallis test results showed a significant difference ($p < 0.05$) in the average brightness and intensity of tooth color using the shade guide and CIELab methods between groups. The Mann Whitney Post-Hoc test results showed a significant difference ($p < 0.05$) between the treatment group and the negative control group at both treatment durations, namely 7 days and 14 days. The SEM test results showed that the best enamel prism microstructure was in the 20% treatment group and the negative control at both durations, namely 7 days and 14 days. The conclusion of this study is that there is an effect of giving a dental bleaching patch of belimbing wuluh (*Averrhoa bilimbi* L.) extract affects changes in tooth color and enamel prism after tea soaking.*

Keywords: belimbing wuluh extract, bleaching patch, enamel prism, tooth discoloration

