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**PENGARUH PASTA EKSTRAK BELIMBING WULUH (Averrhoa bilimbi L.) TERHADAP PENGHILANGAN EXTRINSIC STAIN
PADA PERMUKAAN GIGI, GIGI ARTIFISIAL, DAN PLAT RESIN AKRILIK (Kajian in vitro)**
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INTISARI

Substansi warna dari makanan atau minuman yang dikonsumsi sehari-hari dapat menimbulkan *extrinsic stain* pada permukaan gigi, gigi artifisial, dan plat resin akrilik. Belimbing wuluh memiliki kandungan asam oksalat yang berpotensi menghilangkan *extrinsic stain.* Penelitian ini bertujuan untuk mengetahui pengaruh pasta ekstrak belimbing wuluh (*Averrhoa bilimbi L.*) terhadap penghilangan *extrinsic stain* pada permukaan gigi, gigi artifisial, dan plat resin akrilik (kajian *in vitro*).

Lima belas gigi incisivus sentralis rahang atas pasca-pencabutan, 15 gigi artifisial resin akrilik incisivus sentralis rahang atas, dan 15 plat resin akrilik direndam dalam larutan teh hitam (2g/100ml air mendidih), selama enam hari. Subjek penelitian terbagi dalam tiga kelompok perlakuan yaitu pasta dasar, pasta penghilang *stain*, dan pasta ekstrak belimbing wuluh. Pengambilan foto menggunakan kamera DSLR sebelum perendaman, setelah perendaman, dan setelah penyikatan dalam studio mini. Pengaturan kamera manual, ISO 200, *aperture* 8, *shutter speed* 8, lampu 5 watt, filter biru ketebalan 1 mm, dan jarak objek 15 cm. Adobe Photoshop CC 2014 digunakan untuk mengetahui selisih intensitas warna (Lab) antara setelah perendaman dan setelah penyikatan. Data dianalisis secara statistik menggunakan *two way ANOVA* dan *LSD.*

Hasil *two way ANOVA* menunjukkan pengaruh yang signifikan ($p<0,05$) pada jenis bahan dan jenis pasta. Hasil *LSD* menunjukkan perbedaan yang tidak signifikan ($p>0,05$) antara penggunaan pasta ekstrak belimbing wuluh dan pasta penghilang *stain* pada ketiga bahan. Gigi dengan gigi artifisial memiliki perbedaan yang tidak signifikan ($p>0,05$) pada perlakuan ketiga jenis pasta. Kesimpulan penelitian ini adalah pasta ekstrak belimbing wuluh berpengaruh menghilangkan *extrinsic stain* pada permukaan gigi, gigi artifisial, dan plat resin akrilik.

Kata kunci : gigi, gigi artifisial, plat resin akrilik, ekstrak *Averrhoa bilimbi L.*, *extrinsic stain.*

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ABSTRACT

Color substance from food or beverages which consumed everyday could induce extrinsic stain formation at the surface of teeth, artificial teeth, and acrylic resin plates. Oxalic acid in belimbing wuluh was potential to remove an extrinsic stain. The aim of this study was to determine the effect of paste of belimbing wuluh *paste for extrinsic stain removal from the surface of teeth, artificial teeth, and acrylic resin plates (in vitro study).*

Fifteen maxillary central incisor post-extraction teeth, 15 maxillary central incisor acrylic resin denture teeth, and 15 acrylic resin plates were immersed in black tea solution (2 g/100 ml boiled water), for 6 days. All subjects were divided into 3 groups treatment, with base paste, stain removal paste, and extract of belimbing wuluh paste. The surface image was taken using DSLR camera before tea immersion, after tea immersion, and after brushing at mini studio. Camera was adjusted in manual mode, ISO 200, aperture 8, shutter speed 8, lamp 5 watt, blue filter thickness 1 mm, and object length 15 cm. Adobe Photoshop CC 2014 was used to evaluate the difference color intensity (Lab) after immersion and after brushing. Data was statistically analyzed with two way ANOVA and LSD.

Two way ANOVA showed there was significant effect ($p<0,05$) between type of materials and pastes. LSD showed there was no significant effect ($p>0,05$) between application paste of belimbing wuluh *extract and stain removal paste. There was no significant difference ($p>0,05$) between teeth and artificial teeth when used three type of pastes. The conclusion of this study is paste of* belimbing wuluh *extract has an effect to remove extrinsic stain at the surface of teeth, artificial teeth, and acrylic resin plate.*

Keyword : *teeth, artificial teeth, acrylic resin plates, extract of Averrhoa bilimbi L., extrinsic stain*