

## INTISARI

Permasalahan warna pada gigi, gigi tiruan, dan plat resin akrilik menimbulkan permasalahan estetika dan ketidakpuasan pasien. Efek mengkonsumsi makanan atau minuman yang mengandung substansi warna menyebabkan timbulnya *stain* ekstrinsik pada permukaan gigi asli, gigi tiruan dan plat resin akrilik. Tanaman jahe memiliki kandungan eugenol yang berpotensi menghilangkan *stain* ekstrinsik. Penelitian ini bertujuan untuk mengetahui pengaruh pasta ekstrak jahe (*Zingiber officinale* Roxb.) sebagai pasta gigi penghilang *stain* ekstrinsik pada permukaan gigi asli, gigi tiruan dan plat resin akrilik.

Subjek penelitian berjumlah 25 gigi premolar satu rahang atas pasca-pencabutan, 25 gigi tiruan premolar satu rahang atas, dan 25 buah plat resin akrilik. Subjek penelitian dibagi dalam 5 kelompok perlakuan yaitu pasta dasar, pasta ekstrak jahe konsentrasi 5%, 10%, 15% dan pasta penghilang *stain*. Sebelum terbentuk *stain* (F1), subjek difoto dengan kamera USB yang terhubung dengan *software timelapse* di komputer. Kamera USB dengan pengaturan *auto exposure*, lampu 5 watt, filter biru ketebalan 1 mm, dan jarak objek 15 cm. Seluruh subjek direndam dalam larutan teh hitam (2,5 g/100 ml air mendidih) selama 7 hari. Subjek kemudian difoto untuk mengambil data foto pembentukan *stain* (F2). Kemudian subjek disikat lalu difoto untuk mengambil data foto pembersihan *stain* ekstrinsik (F3). *Software ImageJ* digunakan untuk mengetahui selisih intensitas warna (LAB) antara setelah perendaman (F2) dan setelah penyikatan (F3).

Hasil *One-Way ANOVA* menunjukkan terdapat pengaruh yang signifikan ( $p < 0,05$ ) pada jenis bahan dan jenis pasta. Hasil uji *Post-hoc LSD* menunjukkan perbedaan tidak signifikan antara penggunaan pasta ZACT<sup>®</sup> dengan pasta gigi ekstrak jahe konsentrasi 5%, 10% dan 15 % pada ketiga jenis permukaan. Kesimpulan penelitian ini adalah pasta ekstrak jahe berpengaruh menghilangkan *stain* ekstrinsik pada permukaan gigi asli, gigi tiruan, dan plat resin akrilik.

**Kata kunci :** gigi asli, gigi tiruan, plat resin akrilik, *Zingiber officinale* Roxb., *stain* ekstrinsik

### *Abstract*

*Discolorisation of the teeth and denture caused aesthetic problems and patient dissatisfaction. The effect of consuming food or beverage which has color substance can induce extrinsic stain formation at the surface of teeth, artificial teeth and acrylic resin plates. Eugenol in ginger plant is potential to remove extrinsic stain. The aim of this study is to determine the effect of ginger extract paste as a stain extrinsic removal paste from the surface of teeth, artificial teeth and resin acrylic plates.*

*The study subjects were 25 post-extraction upper premolar teeth, 25 upper premolar artificial teeth, and 25 resin acrylic plates. All subjects were divided into 5 group treatments, with base paste, stain extrinsic removal paste, and extract 5%, 10% and 15% of ginger paste. Subjects were captured with timelapse software connected to USB camera in a computer (F1). The USB camera was adjusted to auto exposure, lamp 5 watt, blue filter with 1 mm thickness and object length 15 cm. The whole subjects were immersed in a black tea solution (2,5g/100 ml) for 7 days. The inducing black tea solution subjects were captured to have stain induction pictures (F2). The subjects were brushed by brushing machine with 200 g load and 5 moves/second. They were captured to have stain extrinsic removal pictures (F3). ImageJ software with CIELAB system was used to measure the difference color intensity after immersion (F2) and after brushing (F3).*

*One-Way ANOVA showed there was significant value  $p=0,000$  ( $p<0,05$ ) between type of materials and paste. LSD test showed there was not significantly different ( $p>0,05$ ) between the use of ZACT<sup>®</sup> paste and the 5%, 10% and 15% ginger extract paste at the three of material types. The conclusion of this study was paste of ginger extract has an effect of to remove extrinsic stain at the surface of teeth, artificial teeth, and acrylic resin plates.*

**Keywords :** *teeth, artificial teeth, acrylic resin plates, Zingiber officinale Roxb., stain extrinsic.*