

# Pengaruh Peradaman Komposit Microhybrid G-Aenial Anterior TM Dalam Larutan Cokelat Indonesia Terhadap Perubahan Warna = The Influence of immersion in Indonesian Chocolate Solution on G-aenial Anterior TM Microhybrid Resin Composite Color Change

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## Abstrak

Tujuan: Penelitian ini bertujuan untuk mengetahui perubahan warna dari resin komposit mikrohibrida setelah perendaman dalam minuman cokelat Indonesia. Metode Penelitian: Dalam penelitian ini digunakan resin komposit mikrohibrida G-aenial Anterior<sup>TM</sup>. Spesimen berbentuk silinder dengan ukuran diameter 6 mm dan tebal 2 mm. Selempar mylar strip diletakkan diatas permukaan resin komposit sebelum dilakukan proses curing. Polimerisasi dilakukan menggunakan Light Curing Unit (Ledmax Hilux Model 450) selama 20 detik dengan irradiansi 700 mw/cm<sup>2</sup>. Setelah polimerisasi, spesimen direndam dalam akuades pada suhu 37oC selama 24 jam. Spesimen dibagi menjadi tujuh kelompok (n = 6) yaitu; perendaman pada larutan kakao asal Aceh, Lampung, Jawa Timur, Bali, Flores, Kendari dan Akuades. Spesimen direndam dalam larutan cokelat dengan durasi 24 jam selama 7 hari dengan penggantian larutan setiap harinya. Warna spesimen diukur menggunakan Colorimeter NH310 (Shenzhen 3NH) menurut sistem warna CIE L\*a\*b\* setelah perendaman pada akuades selama 24 jam dan setelah direndam dalam larutan cokelat Indonesia selama 7 hari. Indeks perubahan warna (E\*) antara setiap kelompok dihitung. Data dianalisis menggunakan uji One-Way Anova untuk menilai perbedaan warna antar kelompok perendaman. pH larutan cokelat diukur menggunakan pH meter (Thermo Scientific Orion Star A211 Benchtop). Hasil: Resin komposit G-aenial Anterior<sup>TM</sup> yang telah direndam di dalam enam larutan cokelat selama 7 hari menunjukkan perubahan warna yang signifikan antar kelompok (p<0,05). Larutan cokelat menyebabkan perubahan warna yang signifikan hanya pada satu kelompok yaitu kelompok G-aenial Anterior<sup>TM</sup> yang direndam dalam larutan cokelat Lampung. Perubahan warna yang paling rendah didapatkan pada kelompok resin komposit yang direndam dalam larutan cokelat Bali. Kesimpulan: Disimpulkan bahwa seluruh larutan cokelat tidak menyebabkan perubahan warna secara signifikan, kecuali pada larutan cokelat asal Lampung.

.....Objectives: The aim of this study was to analyse the color change of resin composite microhybrid after immersion in Indonesian Chocolate Drink. Material and Methods: G-aenial Anterior<sup>TM</sup> resin composite was used in this study. All materials were prepared and polymerized into disk-shaped specimens of 6 mm in diameter and 2 mm in thickness. A piece of mylar strip was placed on top of the specimens just before the polymerization. Polymerization was done using Light Curing Unit (Ledmax Hilux Model 450 for 20 seconds with irradiance of 700 mw/cm<sup>2</sup>. Specimens were immersed in 37oC aquadest solution for 24 hours after polymerization was done. Specimens were divided into seven groups (n=6); immersion in chocolate drink from Aceh, Lampung, Jawa Timur, Bali, Flores, Kendari, and Aquadest. Specimens were immersed in chocolate drink for 7 days (with the duration being 24 hours daily). The chocolate drink solutions were changed daily. Color of the specimens were measured using Colorimeter NH310 (Shenzhen 3NH) according to the CIE L\*a\*b\* color system after immersion in aquadest solution for 24 hours and after immersion in Indonesian chocolate drink for 7 days. Color change (E\*) of every groups was calculated. Data were analysed using One-Way Anova to assess the significant differences among immersion groups. pH levels of

all chocolate drink was measured using a pH meter. (Thermo Scientific Orion Star A211 Benchtop). Results: G-aenial Anterior™ resin composite showed significant color differences among each groups after immersion in chocolate drink for 7 days ( $p < 0,05$ ). G-aenial Anterior™ resin composite that has been immersed in Lampung chocolate drink was the only group with significant color change. The least amount of color change was found in G-aenial Anterior™ resin composite immersed in Bali chocolate drink. Conclusions: It was concluded that none of the chocolate drink from Indonesia caused significant color change, except for Lampung chocolate drink.