

INTISARI

E-glass short fiber reinforced composite memiliki sifat hidrofilik. Tumpatan *E-glass short fiber reinforced composite* dalam rongga mulut akan berkontak dengan minuman kopi. Zat warna tanin dalam kopi dapat terlarut dalam air dan mengalami absorpsi dan adsorpsi sehingga menyebabkan perubahan warna. Tujuan penelitian ini adalah mengetahui pengaruh lama perendaman dalam larutan kopi robusta terhadap perubahan warna *E-glass short fiber reinforced composite*.

Penelitian dilakukan pada cakram *E-glass short fiber reinforced composite* (005117 everX Posterior™, GC Asia Dental Pty Ltd, Singapura) dengan diameter 10 mm dan tinggi 2 mm sebanyak 6 keping. Subyek penelitian direndam dalam 200 ml larutan kopi robusta (Excelso Robusta Gold, PT. Santos Jaya Abadi, Indonesia) suhu 37°C selama 24 jam, 48 dan 72 jam. Warna awal dan akhir *E-glass short fiber reinforced composite* diukur dengan alat *chromameter* CR-400 (Konica Minolta, Jepang). Data hasil perhitungan uji perubahan warna ditunjukkan dalam nilai $\Delta E_{L^*a^*b^*}$. Data dianalisis statistik dengan uji ANAVA satu jalur dilanjutkan uji *post-hoc* LSD_{0,05}.

Hasil penelitian menunjukkan nilai rerata dan simpangan baku ΔE *E-glass short fiber reinforced composite* setelah perendaman dalam larutan kopi robusta selama 24 jam, 48 jam, dan 72 jam adalah 7,37±1,68, 10,06±0,71, dan 10,60±1,23. Hasil uji ANAVA satu jalur menunjukkan bahwa lama perendaman dalam larutan kopi robusta berpengaruh terhadap perubahan warna *E-glass short fiber reinforced composite* ($p < 0,05$). Kesimpulan penelitian ini adalah lama perendaman dalam larutan kopi robusta berpengaruh meningkatkan perubahan warna *E-glass short fiber reinforced composite*.

Kata kunci : *E-glass short fiber reinforced composite*, kopi robusta, lama perendaman, perubahan warna

ABSTRACT

E-glass short fiber reinforced composite has hydrophilic property. E-glass short fiber reinforced composite filling will be contacted by drinks such as coffee. Tannic acid which is contained inside coffee is soluble to water so it will be absorbed and adsorbed into filling material. The interaction of E-glass short fiber reinforced composite with coffee solution may cause an effect on the color change of the material. This research was conducted with the aim to determine the influence of immersion duration in robusta coffee solution to E-glass short fiber reinforced composite's color.

The research was conducted on 6 E-glass short fiber reinforced composite disc (005117 everX Posterior™, GC Asia Dental Pty Ltd, Singapore) with 10 mm diameters and 2 mm thickness. Subjects were immersed in 200 ml of 37°C robusta coffee (Excelso Robusta Gold, PT. Santos Jaya Abadi, Indonesia) for 24 hours, 48 hours, and 72 hours. The initial and final color was measured by chromameter CR-400 (Konica Minolta, Japan). The result data of the color change test were obtained as color change value presented in $\Delta E_{L^*a^*b^*}$. The data were statistically analyzed by one-way analysis of variance (ANOVA) followed by post-hoc $LSD_{0.05}$.

The result revealed that the mean and standard deviation of color change (ΔE) after immersion on robusta coffee solution for 24, 48, and 72 hours were 7.37 ± 1.68 , 10.06 ± 0.71 , and 10.60 ± 1.23 . One-way ANOVA test revealed that the immersion duration in robusta coffee affected the color change of E-glass short fiber reinforced composite ($p < 0.05$). The conclusion of this research was that immersion duration in robusta coffee solution had an effect on increasing the color change of E-glass short fiber reinforced composite.

Keywords : E-glass short fiber reinforced composite, robusta coffee, duration of immersion, color change