

INTISARI

Fiber reinforced composite (FRC) adalah salah satu material restorasi gigi yang sering digunakan karena memiliki sifat estetis dan mekanis yang baik. *Fiber reinforced composite* akan berinteraksi dengan makanan dan minuman. Salah satu minuman yang digemari masyarakat Indonesia adalah kopi. Tujuan penelitian ini untuk mengetahui efek dari konsentrasi larutan kopi robusta terhadap *compressive strength* FRC.

Penelitian ini menggunakan *E-glass fiber reinforced composite* (everX Posterior GC, Jepang) dan Kopi Fine Robusta (hutan Kemuning-Temanggung). Sampel dibuat sebanyak dua belas berbentuk silindris (diameter 4 mm dan tinggi 6 mm). Sampel dibagi menjadi tiga kelompok perlakuan. Kelompok pertama direndam dalam larutan kopi dengan perbandingan serbuk dan air 1,625 gram/100 mL (1,599%), kelompok kedua 3,25 gram/100 mL (3,147%) dan kelompok ketiga 4,875 gram/100 mL (4,648%). Nilai *compressive strength* diukur dengan *universal testing machine*. Data yang diperoleh dianalisis menggunakan uji ANAVA satu-jalur.

Hasil penelitian menunjukkan nilai rerata *compressive strength* untuk kelompok konsentrasi 1,599%; 3,147%; dan 4,648% secara berurutan $303,77 \pm 10,53$; $293,17 \pm 7,16$; $273,04 \pm 12,36$ MPa. Nilai rerata *compressive strength* yang diperoleh menunjukkan kecenderungan penurunan dari kelompok pertama hingga ketiga. Hasil uji ANAVA satu-jalur menunjukkan tidak terdapat pengaruh yang bermakna dari variasi konsentrasi perendaman dalam larutan kopi robusta terhadap *compressive strength* FRC ($p > 0,05$). Kesimpulan penelitian ini adalah variasi konsentrasi kopi robusta menurunkan *compressive strength* FRC namun tidak signifikan.

Kata kunci : *fiber reinforced composite* (FRC), kopi robusta, *compressive strength*

ABSTRACT

Fiber reinforced composite (FRC) is one of the dental restoration materials that is often used because it has good aesthetic and mechanical properties. Fiber reinforced composites will interact with food and drinks. One drink that is favored by the people of Indonesia is coffee. The purpose of this study was to determine the effect of Robusta coffee concentration concentrations on FRC compressive strength

This research used E-glass fiber reinforced composite (everX Posterior GC, Japan) and Kopi Fine Robusta (Kemuning-Temanggung forest). Twelve cylindrical shaped samples (4 mm diameter and 6 mm height) were sampled. The sample was divided into three treatment groups. The first group was immersed in a coffee solution with a ratio of powder and water 1.625 grams / 100 mL (1.599%), the second group 3.25 grams / 100 mL (3.147%) and the third group 4.875 grams / 100 mL (4.648%). The value of compressive strength was measured by a universal testing machine. The data obtained were analyzed using the one-way ANOVA test

The results showed the mean value of compressive strength for the concentration group was 1.599%; 3.147%; and 4.648% respectively 303.77 ± 10.53 ; 293.17 ± 7.16 ; 273.04 ± 12.36 MPa. The mean value of compressive strength obtained showed a tendency to decrease from the first to the third group. The results of the one-way ANOVA test showed no significant effect of variations in the concentration of immersion in Robusta coffee solution on compressive strength FRC ($p > 0.05$). The conclusion of this study is the variation of Robusta coffee concentration decreases FRC compressive strength but it is not significant.

Keywords: fiber reinforced composite (FRC), robusta coffee, compressive strength