INTISARI

Resin komposit *nanofiller* memiliki sifat menyerap air ke dalam matriks resin secara difusi. Teh hitam mengandung pigmen berupa zat *theaflavin* dan *thearubigin* yang dapat merubah warna pada resin komposit *nanofiller.* Tujuan dari penelitian ini adalah untuk mengetahui pengaruh lama waktu perendaman resin komposit *nanofiller* di dalam larutan teh hitam terhadap perubahan warna.

Sampel resin komposit *nanofiller* 3M ESPE Filtek Z250 sebanyak 18 keping berbentuk cakram dengan diameter 10 mm dan ketebalan 2 mm direndam *aquadest* pada suhu 37°C selama 24 jam kemudian warna awal diukur menggunakan *chromameter.* Sampel dibagi menjadi 3 kelompok perlakuan perendaman dalam larutan teh hitam 1% pada suhu 37°C yang diganti setiap 24 jam. Kelompok I selama 1 hari, Kelompok II selama 3 hari, dan kelompok III selama 7 hari. Pengukuran warna resin dilakukan dengan *chromameter* melalui sistem CIE L*a*b. Selisih nilai awal dan akhir dianalisis menggunakan Anava Satu Jalur dan *post hoc* (α 0,05).

Rerata dan hasil perubahan warna resin komposit *nanofiller* secara berurutan adalah 8,39±1.40 (3 hari), 8,48±1.93 (5 hari), 11,42±1,85 (7 hari). Hasil ANAVA menunjukkan signifikansi 0,013 (<0,05) sehingga terdapat pengaruh lama perendaman resin komposit *nanofiller* di dalam larutan teh hitam terhadap perubahan warna. Kesimpulan penelitian ini adalah terdapat perubahan warna resin komposit *nanofiller* yang direndam dalam larutan teh hitam dengan lama waktu yang bervariasi. Perubahan warna terbesar pada perendaman 7 hari.

Kata kunci : Resin komposit *nanofiller*, perubahan warna, Lama waktu perendaman, Teh hitam

ABSTRACT

Nanofiller composite resin has a characteristic of high water absorbance into the matrix resin through diffusion. Black tea contains pigment compounds such as theaflavin and thearubigin which may result in discoloration of nanofiller composite resin. The aim of this research is to determine the effect of soaking time for nanofiller composite resin in black tea solution on color changes..

*A sample of 18 pieces of 3M ESPE Filtek Z250 nanofiller composite resin in the shape of a disc with a diameter of 10 mm and a thickness of 2 mm were soaked in distilled water at a temperature of 37°C for 24 hours then the initial color was measured using a chromameter. Samples were divided into 3 treatment groups by soaking in 1% black tea solution at a temperature of 37°C which was changed every 24 hours. Group I for 1 day, Group II for 3 days, and group III for 7 days. Resin color measurement is carried out with a chromameter through the CIE L*a*b system. The difference in initial and final values was analyzed using One Way ANOVA and post hoc (α 0,05).*

The mean and results of color change of nanofiller composite resin in order were 8,39±1.40 (3 days), 8,48±1.93 (5 days), 11,42±1,85 (7 days). The ANOVA results showed a significance of 0.013 (<0.05) which means there was an influence on the duration of soaking the nanofiller composite resin in black tea solution on the color change. The conclusion of this research is that there is a change in the color of nanofiller composite resin soaked in black tea solution for varying lengths of time. The biggest color change was at 7 days of soaking.

***Keywords** : Nanofiller composite resin, color change, duration time of soaking, black tea*