

DIFFERENCE OF SURFACE HARDNESS OF NANOFILLED COMPOSITE IMMERSERD IN SODA CONTAINS SUGAR AND CONTAINS ASPARTAME

ABSTRACT

Background: Nowadays, there is a change in human lifestyle, one of them is an increase in consumption of soft drinks. To overcome the problems in patients associated with the consumption of carbohydrates, aspartame is used as an alternative sweetener of sugar. Sodas have a low pH can affect the integrity of the nanofilled composite resin, including surface hardness. **Purpose:** To prove that there is a differences of the surface hardness of nanofilled composite resin after immersed in soda drink contains sugar and carbonated drink contains aspartame. **Methods:** Total 27 samples of nanofilled cylindrical composite divided into 3 kinds of immersion (aquadest, Coca-Cola, Coca-Cola Zero). This materials were immersed into soda drinks for 5 minutes, then moved into aquadest until 24 hours. This experiment was carried up to 7 days. After 7 days, the materials were tested the surface hardness with Vickers Microhardness Tester. Data were taken and tested statistically. **Results:** By using One Way ANOVA, there was a significant differences in surface hardness in the entire groups. And with Tukey HSD test, there was a significant difference in each group comparison. **Conclusion:** There is a difference of the surface hardness of nanofilled composite resin after immersed in soda contains sugar and soda contains aspartame.

Keywords: Composite; Nanofilled; Surface Hardness; Soda; Sugar; Aspartame.

PERBEDAAN KEKERASAN PERMUKAAN RESIN KOMPOSIT NANOFILLER SETELAH TERPAPAR MINUMAN SODA BERGULA DAN BERASPARTAM

ABSTRAK

Latar Belakang: Saat ini terjadi perubahan pada gaya hidup manusia, salah satunya peningkatan konsumsi minuman bersoda. Untuk mengatasi permasalahan pada penderita yang berhubungan dengan konsumsi karbohidrat, aspartam digunakan sebagai pemanis alternatif pengganti gula. Minuman bersoda memiliki pH rendah yang dapat mempengaruhi integritas resin komposit nanofiller, termasuk kekerasan permukaan. **Tujuan:** Membuktikan adanya perbedaan kekerasan permukaan komposit nanofiller setelah perendaman dalam minuman soda bergula dan minuman soda beraspartam **Metode:** 27 sampel resin komposit nanofiller berbentuk silindris dibagi menjadi 3 jenis perendaman (akuades, Coca-Cola, Coca-Cola Zero). Sampel direndam pada minuman soda selama 5 menit lalu dipindah dalam akuades hingga 24 jam. Percobaan ini dilakukan hingga 7 hari. Setelah 7 hari, sampel diuji kekerasan permukaannya menggunakan Vickers Microhardness Tester. Data diambil dan diuji statistiknya. **Hasil:** Dengan menggunakan One Way ANOVA, terdapat perbedaan bermakna pada setiap kelompok perlakuan. Dengan menggunakan uji Tukey HSD, terdapat perbedaan bermakna pada setiap perbandingan kelompok. **Kesimpulan:** Terdapat perbedaan kekerasan permukaan resin komposit nanofiller setelah perendaman dalam minuman soda bergula dan minuman soda beraspartam.

Kata Kunci: Komposit; Nanofiller; Kekerasan Permukaan; Minuman Bersoda; Gula; Aspartam