

**SKRIPSI**

**PENGARUH KONSUMSI MINUMAN SERBUK INSTAN RASA JERUK  
TERHADAP PELEPASAN FLUOR BAHAN RESTORASI  
*GLASS IONOMER CEMENT***



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**PADANG**

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## **Pengaruh konsumsi minuman serbuk instan rasa jeruk terhadap pelepasan fluor bahan restorasi *glass ionomer cement***

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### **ABSTRAK**

**Latar Belakang:** *Glass ionomer cement* merupakan bahan kedokteran gigi yang banyak digunakan sebagai salah satu bahan restorasi karena sifatnya yang dapat melepaskan fluor. Pelepasan fluor GIC salah satunya dapat dipengaruhi oleh pH pada rongga mulut. Perubahan pH rongga mulut dapat disebabkan karena mengonsumsi makanan atau minuman dengan pH asam, seperti minuman serbuk instan rasa jeruk yang memiliki pH sekitar 3,5. Rongga mulut dengan pH asam dapat meningkatkan pelepasan fluor. **Tujuan penelitian:** Mengetahui pengaruh konsumsi minuman serbuk instan rasa jeruk terhadap pelepasan fluor bahan restorasi *Glass Ionomer Cement*. **Metode Penelitian:** Penelitian ini adalah penelitian eksperimental laboratoris dengan *post-test only control group design* sebanyak 12 sampel. Sampel GIC masing-masing direndam dalam 50 ml saliva buatan sebagai kelompok kontrol dan 50 ml minuman serbuk instan rasa jeruk sebagai kelompok perlakuan. Sampel direndam dalam interval waktu 30 menit pertama, 30 menit kedua, 30 menit ketiga, 30 menit keempat dan 22 jam dalam inkubator 37°C. Pelepasan fluor kemudian diuji dengan alat Spektrofotometer Uv Vis. Data penelitian dianalisis menggunakan program statistik komputer dengan uji parametrik *Repeated Measure ANOVA*. **Hasil:** Rata-rata nilai pelepasan fluor tertinggi kelompok perlakuan sebesar 1,46 ppm dan nilai terendah sebesar 1,28 ppm, sedangkan rata-rata nilai pelepasan fluor tertinggi kelompok kontrol sebesar 1,33 ppm dan nilai terendah sebesar 1,20 ppm. Analisis *Repeated Measured ANOVA* masing-masing kelompok menunjukkan hasil signifikan dengan nilai  $p < 0,05$ . **Kesimpulan:** Konsumsi minuman serbuk instan rasa jeruk meningkatkan pelepasan fluor bahan restorasi GIC.

**Kata Kunci:** minuman serbuk instan rasa jeruk, bahan restorasi, *glass ionomer cement*, pelepasan fluor



***The effect of orange-flavored instant powder drink consumption on fluoride release of glass ionomer cement restorative materials***

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**ABSTRACT**

**Background:** Glass ionomer cement is a dental material that is widely used as a restorative material due to its ability to release fluoride. The release of GIC fluoride can be influenced by the pH in the oral cavity. Changes in the pH of the oral cavity are caused by consuming foods or drinks with an acidic pH, such as orange-flavored instant powder drinks with a pH of about 3.5. The oral cavity with an acidic pH can increase the fluoride release. **Research objective:** To determine the effect of orange-flavored instant powdered drinks consumption on the fluoride release of Glass Ionomer Cement restorative materials. **Research Methods:** This research was a laboratory experimental study with a post-test-only control group design consisting of 12 samples. Each GIC sample was soaked in 50 ml of artificial saliva as the control group and 50 ml of orange-flavored instant powder drink as the treatment group. Samples were immersed at intervals of the first 30 minutes, the second 30 minutes, the third 30 minutes, the fourth 30 minutes, and 22 hours in an incubator of 37°C. Fluoride release was then tested with a Uv Vis Spectrophotometer. Research data were analyzed using a statistical computer program with the parametric Repeated Measure ANOVA test. **Results:** The highest average value of fluoride release in the treatment group of 1.46 ppm and the lowest value of 1.28 ppm, while the highest average value of fluor release in the control group of 1.33 ppm, and the lowest value of 1.20 ppm. Repeated Measured ANOVA analysis for each group showed significant results with  $p < 0.05$ . **Conclusion:** Consumption of orange-flavored instant powder drinks increases the release of fluoride GIC restorative materials.

**Keywords:** orange flavor instant powder drink, restorative material, glass ionomer cement, fluoride release

