

SKRIPSI

**PENGARUH PERENDAMAN JUS MANGGA (*Mangifera indica L.*)
TERHADAP KEKUATAN TEKAN *RESIN MODIFIED GLASS
IONOMER CEMENT***



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PENGARUH PERENDAMAN JUS MANGGA (*Mangifera indica L.*) TERHADAP KEKUATAN TEKAN *RESIN MODIFIED GLASS IONOMER CEMENT*

Adhifandro Satria Andrian

ABSTRAK

Latar Belakang: *Resin modified glass ionomer cement* adalah salah satu bahan restorasi yang digunakan oleh dokter gigi. Keberadaan *resin modified glass ionomer cement* dalam rongga mulut menyebabkan *resin modified glass ionomer cement* sering berkontak dengan minuman seperti jus mangga. Jus mangga mengandung asam sitrat, asam malat, askorbat dan air. pH jus mangga berada di bawah pH kritis yaitu 4 yang dapat mempengaruhi nilai kekuatan tekan dari *resin modified glass ionomer cement*. **Tujuan penelitian:** mengetahui pengaruh perendaman jus mangga terhadap kekuatan tekan *resin modified glass ionomer cement*. **Metode Penelitian:** Jenis penelitian ini merupakan eksperimental murni dengan rancangan *post test only with control group design*. Sampel dari penelitian ini adalah hasil cetakan bahan restorasi *resin modified glass ionomer cement* yang berbentuk tabung dengan ketebalan 6 mm dan diameter 4 mm dibuat dari *GC Gold Label 2 LC* sebanyak 36 buah. Sampel dibagi menjadi 2 kelompok perlakuan. Kelompok pertama (18 sampel *GC Gold Label 2 LC*) direndam jus mangga selama 24 jam dan disimpan dalam inkubator 37°C. Kelompok kedua (18 sampel *GC Gold Label 2 LC*) sebagai kontrol direndam saliva buatan selama 24 jam dan disimpan dalam inkubator 37°C. Pengujian kekuatan tekan menggunakan alat uji tekan yaitu *Universal Testing Machine (UTM)*. **Hasil penelitian:** menunjukkan rata-rata kekuatan tekan *resin modified glass ionomer cement* pada kelompok perlakuan sebesar $59,12 \pm 1,01$ MPa dan kelompok kontrol sebesar $68,17 \pm 0,89$ MPa. Analisis statistik dilakukan dengan *Independent T-test* menunjukkan hasil $p < 0,05$. **Kesimpulan:** penelitian ini adalah terdapat pengaruh perendaman jus mangga berupa penurunan kekuatan tekan *resin modified glass ionomer cement*.

kata kunci: jus mangga, kekuatan tekan, *resin modified glass ionomer cement*



THE EFFECT OF IMMERSION IN MANGO JUICE TOWARDS THE COMPRESSIVE STRENGTH OF RESIN MODIFIED GLASS IONOMER CEMENT

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ABSTRACT

Background: Resin modified glass ionomer cement are one of the restoration materials that are widely used by dentists. The presence of resin modified glass ionomer cement in the oral cavity causes resin modified glass ionomer cement to often come into contact with beverages such as mango juice. Mango juice contains citric acid, malic acid, ascorbic acid and water. The pH of mango juice is below the critical pH of 4 which can affect the value of the compressive strength of the modified glass ionomer cement resin. **Objective:** know the effect of immersion in mango juice towards the compressive strength of resin modified glass ionomer. **Method:** This type of research is a true experimental with a post test only with control group design. The sample from this study was the result of molded resin modified glass ionomer cement in the form of a tube with a thickness of 6 mm and a diameter of 4 mm made from GC Gold Label 2 LC as many as 36 pieces. Samples were divided into two groups. The first group (18 samples of GC Gold Label 2 LC) was immersed in mango juice for 24 hours in an incubator at 37°C. The second group (18 samples of GC Gold Label 2 LC) as a control was immersed in artificial saliva for 24 hours in an incubator at 37°C. The compressive strength was determined using a compression machine, namely the Universal Testing Machine (UTM). **Result:** showed that the mean compressive strength of resin modified glass ionomer cement immersed in mango juice was $59,12 \pm 1,01$ MPa and immersed in artificial saliva was $68,17 \pm 0,89$ MPa. Data were analyzed with Independent T-test showing the results of $p < 0.05$. **Conclusion:** there was an effect of immersion in mango juice towards the decreasing of the compressive strength of resin modified glass ionomer cement.

keywords : compressive strength, mango juice, resin modified glass ionomer cement,

