

ABSTRAK

Rosalina, Irma. 2016. Pengaruh Lama Perendaman *Overnight Time Heat Cured Acrylic Resin* dalam Ekstrak Jahe Gajah (*Zingiber officinale Roscoe*) 10% Terhadap Kekuatan Impak. Tugas Akhir. Program Studi Pendidikan Dokter Gigi Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Wahyu Susilaningtyas, drg., Sp. Pros (2) Fatima, drg., Sp.Pro

Heat cured acrylic resin sering digunakan sebagai basis gigi tiruan. Salah satu sifat mekanis resin akrilik adalah kekuatan impak. Kekuatan impak berperan penting mempertahankan kekuatan gigi tiruan jika mengalami benturan spontan saat jatuh pada permukaan keras. Pembersih gigi tiruan berfungsi menghilangkan plak dan *stain* pada gigi tiruan. Saat ini terdapat pembersih gigi tiruan kimia yang mengandung enzim proteolitik dengan perendaman *overnight time*, yaitu perendaman selama 8 jam ketika pasien tidur. Jahe gajah mengandung enzim proteolitik yang efektif memecah protein plak gigi serta mengandung fenol yaitu *gingerol* dan *shogaol* sebagai anti-fungal dan anti-bakteri. Tujuan penelitian ini adalah untuk mengetahui pengaruh lama perendaman *overnight time heat cured acrylic resin* dalam ekstrak jahe gajah (*Zingiber officinale Roscoe*) 10% terhadap kekuatan impak. Sampel berukuran 65 x 10 x 2,5 mm berjumlah 20 lempeng. Kelompok penelitian terdiri dari 2 kelompok perlakuan dan 2 kelompok kontrol, masing-masing kelompok terdiri dari 5 sampel. Kelompok perlakuan direndam dalam ekstrak jahe gajah 10% selama 10 hari dan 20 hari, sedangkan kelompok kontrol direndam dalam akuades selama 10 hari dan 20 hari. Pengujian kekuatan impak menggunakan *Impact Testing Instrument* jenis *Charpy Tester*. Data hasil penelitian dianalisis dengan uji *One way ANOVA*. Hasilnya didapatkan penurunan kekuatan impak seiring lamanya perendaman dan perbedaan kekuatan impak yang signifikan antara kelompok kontrol dan perlakuan ($\alpha < 0.05$), sehingga dapat disimpulkan bahwa pengaruh lama perendaman *overnight time heat cured acrylic resin* dalam ekstrak jahe gajah (*Zingiber officinale Roscoe*) 10% dapat menurunkan kekuatan impak.

Kata Kunci: *heat cured acrylic resin*, overnight time, ekstrak jahe gajah 10%, kekuatan impak

ABSTRACT

Rosalina, Irma. 2016. The Effect of Overnight Time Immersion Duration of Heat Cured Acrylic Resin in 10% Gajah Ginger Extracts (*Zingiber officinale Roscoe*) Toward Impact Strength. Final Assignment. Dentistry Program, Faculty of Medicine Brawijaya University. Supervisors : (1) Wahyu Susilaningtyas, drg., Sp.Pros (2) Fatima, drg., Sp.Pros

Heat cured acrylic resin is often used as a denture base material. One of the mechanical properties of acrylic resin is impact strength. Impact strength has an important role to maintain the dentures strength when it got clash spontaneously on hard surface. Denture cleansers have a function to remove plaque and stain on denture. Nowadays there're chemical denture cleansers containing proteolytic enzymes with overnight time immersion methode which's immersed for 8 hours while the patient is sleeping. Gajah ginger contains proteolytic enzymes that effectively breakdown dental plaque proteins and contains phenols (*gingerol* and *shogaol*) as anti-fungal and anti-bacterial agents. The purpose of this study was to determine the effect of overnight time immersion duration of heat cured acrylic resin in 10% gajah ginger extracts (*Zingiber officinale Roscoe*) toward impact strength. Twenty sample with size of 65 x 10 x 2.5 mm divided into 2 treatment groups and 2 control groups, each group consists of 5 samples. The treatment groups immersed in 10% ginger extracts for 10 days and 20 days, while the control groups immersed in distilled water for 10 days and 20 days. The impact strength test used Charpy Tester of Impact Testing Instrument. The data were analyzed by One way ANOVA test. The result showed a decreasing of impact strength along the duration of immersion and the significant difference of impact strength between control and treatment groups ($\alpha < 0.05$). It can be concluded that the overnight time immersion duration of heat cured acrylic resin in 10% gajah ginger extracts (*Zingiber officinale Roscoe*) could decrease the impact strength.

Keywords: heat cured acrylic resin, overnight time, 10% ginger extracts, impact strength

