

## ABSTRAK

Vony Anggraeni, Matyas. 2016. *Pengaruh Panjang Fiber Pada 1% Glass Fiber Reinforced Heat Cured Acrylic Resin Terhadap Kekuatan Transversa*. Tugas Akhir, Program Studi Pendidikan Dokter Gigi Fakultas Kedokteran Universitas Brawijaya. Pembimbing : (1) drg. Wahyu Susilaningtyas, Sp.Pros. (2) drg. Neny Roeswahjuni, Sp.Ort

Gigi tiruan merupakan peranti yang digunakan untuk menggantikan gigi yang sudah hilang. Material basis gigi tiruan yang sering digunakan adalah resin akrilik *heat cured*. Resin akrilik *heat cured* memiliki kekurangan utama yaitu lemahnya kekuatan transversa. Kekuatan transversa merupakan kekuatan pada gigi tiruan terhadap beban, tekanan dan dorongan sewaktu mulut berfungsi. Penambahan *glass fiber* merupakan salah satu cara untuk meningkatkan kekuatan transversa resin akrilik *heat cured*. Penelitian ini bertujuan untuk mengetahui pengaruh panjang *fiber* pada *glass fiber reinforced heat cured acrylic resin* 1% terhadap kekuatan transversa. Studi eksperimental ini menggunakan resin akrilik *heat cured* dengan ukuran 65 mm x 10 mm x 2,5 mm berjumlah 24 lempeng dan terbagi dalam 4 kelompok perlakuan. Kelompok 1 (kontrol) sampel resin akrilik *heat cured* tanpa penambahan *glass fiber*, kelompok 2 sampel resin akrilik *heat cured* dengan penambahan *glass fiber* 1% dengan panjang 4 mm, kelompok 3 sampel resin akrilik *heat cured* dengan penambahan *glass fiber* 1% dengan panjang 6 mm, kelompok 4 sampel resin akrilik *heat cured* dengan penambahan *glass fiber* 1% dengan panjang 8 mm. Pengukuran kekuatan transversa menggunakan alat *Portable Pressure Tester*. Hasil perhitungan statistik dengan menggunakan *one way ANOVA* menunjukkan terdapat pengaruh yang bermakna ( $0,000 < 0,05$ ) panjang *fiber* pada *glass fiber heat cured acrylic resin* 1% terhadap kekuatan transversa.

Kata kunci: *glass fiber, glass fiber reinforced heat cured acrylic resin, kekuatan transversa.*

## ABSTRACT

Vony Anggraeni, Matyas. 2016. Effect of 1% Fiber Length on the Glass Fiber Reinforced Heat Cured Acrylic Resin Toward the Transverse Strength. Final Assignment, Dentistry Program, Faculty of Medicine, Brawijaya University. Supervisor : (1) drg. Wahyu Susilaningtyas, Sp.Pros. (2) drg. Neny Roeswahjuni, Sp.Ort

Denture is a device used to replace the natural teeth that have been lost. Denture base material that is often used is heat cured acrylic resin. Heat cured acrylic resin has a major drawback is the lack of transverse strength. The transverse strength is the strength of the denture to the load, pressure and encouragement as functioning mouth. The common method to improve transverse strength of heat cured acrylic resin is by adding glass fiber. This study aimed to determine the effect of 1% fiber length on the fiber glass fiber reinforced heat cured acrylic resin towards the transverse strength. This experimental study used 24 heat cured acrylic resin plates of 65 mm in length, 10 mm in width and 2.5 mm in thickness and divided into 4 groups. Group 1 (control) acrylic resin heat cured plates without the addition of glass fiber, group 2 acrylic resin heat cured plates with the addition of 1% glass fiber with the length of 4 mm, group 3 acrylic resin heat cured with the addition of 1% glass fiber with the length of 6 mm, group 4 heat cured acrylic resin plates with the addition of 1% glass fiber with the length of 8 mm. Transverse strength was tested by using Portable Pressure Tester. The statistic analysis using one-way ANOVA showed that there was significant difference ( $0,000 < 0,05$ ) among of 1% fiber length on the fiber glass fiber reinforced heat cured acrylic resin towards the transverse strength.

Keywords : glass fiber, glass fiber reinforced heat cured acrylic resin, tranverse strength

