

ABSTRACT***ADDITION OF Bambusa arundinacea (Retz.) Willd. FIBERS ON HEAT-CURED ACRYLIC RESIN TO THE IMPACT STRENGTH*****ABSTRACT**

Background : Acrylic resin has been used as a denture base since mid-1940. The prevalence of fractures of acrylic resin dentures is relatively high due to falls when cleaned by patients. The effort to increase the strength of acrylic resin denture is by adding *Bambusa arundinacea (Retz.) Willd* fibers. because it has acceptable tensile properties, relatively low cost, high toughness, and good thermal properties. Based on previous research, it has been proven that the addition of bamboo fiber to self-cured acrylic resin can increase tensile strength. Until now there has been no research on the addition of *Bambusa arundinacea (Retz.) Willd*. fibers in heat-cured acrylic resin to impact strength. **Purpose :** To measure the impact strength of heat-cured acrylic resin after the addition of *Bambusa arundinacea (Retz.) Willd* fibers. with different length and weight. **Methods :** *Bambusa arundinacea (Retz.) Willd*. fibers with a length of 2 mm, 6 mm, 12 mm and weight 3wt%, 6wt%, 9wt%. added to heat-cured acrylic resin. Impact strength test of heat-cured acrylic resin using the Charpy method with mini impact tester KRY type. The test results are calculated using the impact strength formula. The research data were analyzed using one-way anova test and Tukey HSD test. **Results :** The results of the data analysis showed that there was a significant difference in impact strength of heat-cured acrylic resin after the addition of *Bambusa arundinacea (Retz.) Willd* fibers. **Conclusion :** Addition of *Bambusa arundinacea (Retz.) Willd*. fibers increase the impact strength of heat-cured acrylic resin along with the increasing length and weight of *Bambusa arundinacea (Retz.) Willd*. fibers.

Key words : *Bambusa arundinacea (Retz.) Willd* fibers, heat-cured acrylic resin, impact strength.

ABSTRAK**PENAMBAHAN SERAT *Bambusa arundinacea* (Retz.) Willd. PADA RESIN AKRILIK *HEAT-CURED* TERHADAP KEKUATAN IMPAK****ABSTRAK**

Latar belakang : Resin akrilik telah digunakan sebagai basis gigi tiruan sejak pertengahan tahun 1940. Prevalensi fraktur gigi tiruan resin akrilik yang relatif tinggi akibat terjatuh saat dibersihkan oleh pasien. Upaya untuk meningkatkan kekuatan gigi tiruan resin akrilik adalah dengan penambahan serat *Bambusa arundinacea* (Retz.) Willd. karena memiliki sifat *tensile* yang dapat diterima, biaya relatif rendah, *toughness* tinggi, dan sifat termal yang baik. Berdasarkan penelitian sebelumnya telah membuktikan bahwa penambahan serat bambu pada resin akrilik *self-cured* mampu meningkatkan kekuatan tarik. Sampai saat ini belum terdapat penelitian tentang penambahan serat *Bambusa arundinacea* (Retz.) Willd. pada resin akrilik *heat-cured* terhadap kekuatan impak. **Tujuan :** Mengukur kekuatan impak resin akrilik *heat-cured* setelah penambahan serat *Bambusa arundinacea* (Retz.) Willd. dengan ukuran panjang dan berat yang berbeda. **Metode :** Resin akrilik *heat-cured* ditambah serat *Bambusa arundinacea* (Retz.) Willd. dengan ukuran panjang 2 mm, 6 mm, 12 mm dan berat 3wt%, 6wt%, 9wt%. Uji kekuatan impak resin akrilik *heat-cured* dengan metode Charpy menggunakan *mini impact tester* tipe KRY. Hasil uji dihitung menggunakan rumus kekuatan impak. Data penelitian dianalisis menggunakan uji *one-way anova* dan uji Tukey HSD. **Hasil :** Hasil analisis data menunjukkan terdapat perbedaan signifikan kekuatan impak resin akrilik *heat-cured* setelah penambahan serat *Bambusa arundinacea* (Retz.) Willd. **Simpulan :** Penambahan serat *Bambusa arundinacea* (Retz.) Willd. meningkatkan kekuatan impak resin akrilik *heat-cured* seiring dengan meningkatnya ukuran panjang dan berat serat *Bambusa arundinacea* (Retz.) Willd.

Kata kunci : Serat *Bambusa arundinacea* (Retz.) Willd, resin akrilik *heat-cured*, kekuatan impak.