INTISARI

Bahan yang umum digunakan sebagai basis gigi tiruan adalah resin akrilik polimerisasi panas. Resin akrilik polimerisasi panas memiliki kelemahan, yaitu sifat mekanisnya lemah, contohnya pada aspek kekuatan kompresi. Penambahan serat rami dapat memberi alternatif cara meningkatkan kekuatan bahan resin akrilik polimerisasi panas. Tujuan penelitian ini untuk mengkaji pengaruh penambahan partikel mikro serat rami (*Boehmeria nivea*) terhadap kekuatan kompresi basis gigi tiruan resin akrilik polimerisasi panas.

Jenis penelitian yang digunakan adalah ekperimental laboratoris dengan menggunakan 2 kelompok sampel berbentuk silinder yang masing-masing berukuran diameter 6 mm dan tinggi 12 mm sebanyak 16 sampel. Sampel kelompok kontrol adalah plat resin akrilik tanpa penambahan serat rami dan sampel kelompok perlakuan adalah plat resin akrilik dengan penambahan partikel mikro serat rami 30%v/v. Seluruh sampel dimasukkan ke dalam *curing unit* untuk dilakukan *processing*. Pengujian kekuatan kompresi dilakukan menggunakan *universal testing machine*.

Hasil rerata kekuatan kompresi tertinggi terdapat pada kelompok sampel resin akrilik tanpa penambahan. Hasil analisis data menggunakan metode non-parametrik *U Mann-Whitney* menunjukkan bahwa terdapat perbedaan bermakna antara kekuatan kompresi plat resin akrilik kontrol dan perlakuan ($p<0,05$). Kesimpulan penelitian ini adalah terdapat perbedaan kekuatan kompresi antara resin akrilik dengan penambahan partikel mikro serat rami (*Boehmeria nivea)* dan tanpa penambahan, namun terdapat penurunan kekuatan kompresi resin akrilik pasca penambahan partikel mikro serat rami.

Kata kunci: serat rami, *Boehmeria nivea,* resin akrilik, basis gigi tiruan, kekuatan kompresi

ABSTRACT

The most common material used as a denture base was heat-polymerized acrylic resin. Heat-polymerized acrylic resin had a major weakness, which was low in mechanical properties, including compressive strength. The addition of ramie fiber could provide an alternative way to increase the strength of heat-polymerized acrylic resin. The aim of this study was to investigate the effect of adding micro particle of ramie fiber (*Boehmeria nivea*) to heat-polymerized acrylic resin denture base on its compressive strength.

This research was an experimental laboratory study using 2 group samples in the shape of cylindrical, with diameter 6 mm and height 12 mm. Each group consisted of 16 samples, with acrylic resin plate without any addition as control group and acrylic resin plate with an addition of 30%v/v micro particle of ramie fiber as treatment group. All acrylic resin plates were processed inside curing unit. The sample was tested for compressive strength using a universal testing machine.

The result showed that the highest mean of compressive strength was on the control group sample without any addition of ramie fiber. Data analysis using non-parametric method U Mann-Whitney showed that there was a significant difference between the compressive strength of control group and treatment group with $p<0.05$. This research concludes that there is a difference between the compressive strength of control group and treatment group, but the compressive strength of heat-polymerized acrylic resin as a denture base is decreased after the addition of micro particle of ramie fiber (*Boehmeria nivea*).

Keywords: ramie fiber, *Boehmeria nivea*, acrylic resin, denture base, compressive strength