

## INTISARI

Daun sirih merah (*Piper crocatum* Ruiz & Pav) telah diteliti sebagai pembersih gigi tiruan karena mengandung senyawa aktif sebagai antibakteri, antijamur dan antioksidan. Senyawa aktif tersebut dapat bereaksi dengan plat gigi tiruan sehingga mempengaruhi sifat kimia dan fisiknya. Penelitian ini bertujuan untuk mengkaji pengaruh lama perendaman ekstrak daun sirih merah (*P. crocatum* Ruiz & Pav) 40% terhadap kekuatan transversa plat gigi tiruan resin akrilik.

Delapan belas plat resin akrilik dengan panjang 65mm, lebar 10mm, dan tebal 3mm dibagi menjadi 3 kelompok dengan masing-masing kelompok 6 sampel. Kelompok 1 sebagai kontrol direndam dalam akuades selama 3 jam, kelompok 2 dan 3 direndam dalam ekstrak daun sirih merah (*P. crocatum* Ruiz & Pav) konsentrasi 40% selama 1 jam dan 3 jam. Sampel dari setiap kelompok diukur kekuatannya menggunakan *Universal Testing Machine*. Data dianalisis menggunakan analisis varian (ANOVA) satu jalur dilanjutkan dengan uji *Post Hoc* LSD (*Least Significance Difference*) dengan tingkat kepercayaan 95%.

Hasil penelitian menunjukkan kekuatan transversa kelompok 1 yaitu setelah perendaman dengan akuades selama 3 jam paling tinggi yaitu  $116,540 \pm 11,079$  MPa, sedangkan kelompok 3 paling rendah yaitu  $101,068 \pm 11,618$  MPa. Hasil analisis ANOVA satu jalur menunjukkan perbedaan signifikan ( $p < 0,05$ ). Hasil uji *Post Hoc* LSD menunjukkan adanya perbedaan bermakna antara kelompok 1 dan 3 ( $p < 0,05$ ). Kesimpulan, perendaman plat gigi tiruan resin akrilik dalam ekstrak daun sirih merah (*P. crocatum* Ruiz & Pav) konsentrasi 40% selama 3 jam dapat menurunkan kekuatan transversa.

**Kata kunci :** lama perendaman – ekstrak daun sirih merah – kekuatan transversa – resin akrilik

## ABSTRACT

*Piper crocatum* Ruiz & Pav has been investigated as a denture cleanser due to its active contents as antibacterial, antifungal and antioxidant. The active constituents can react with plate denture lead to its physical and chemical properties. The aim of the study was to investigate the influence on soaking for varying time period in *Piper crocatum* Ruiz & Pav extract toward transverse strength of acrylic resin denture plates.

Eighteen acrylic resin denture plate with 65mm x 10mm x 3mm dimension were divided into three groups with 6 sample of each group. Group 1 as control was soaked in aquadest for 3 hours, Group 2 and 3 were soaked in 40% of *P. crocatum* Ruiz & Pav extract for 1 and 3 hours, respectively. Sample of each group was measured its transverse strength using Universal Testing Machine. Data were analyzed using one way analysis of variance (ANOVA) continued by *Post Hoc* LSD (*Least Significance Difference*) test with confidence level of 95% ( $p < 0.05$ ).

The result showed that the transverse strength of group 1 i.e. after soaking in aquadest for 3 hours was highest with  $116.540 \pm 11.079$  MPa, whereas group 3 was lowest with  $101.068 \pm 11.618$  MPa. One way ANOVA result showed significantly difference between three group ( $p < 0.05$ ). The result of *Post Hoc* LSD test showed significantly different between group 1 and group 3 ( $p < 0.05$ ). In conclusion, soaking acrylic resin denture plates in the 40% of *P. crocatum* Ruiz & Pav extract for 3 hours significantly reduces its transverse strength.

**Key words** : soaking period - *Piper crocatum* Ruiz & Pav extract – transverse strength - acrylic resin