

## INTISARI

Termoplastik nilon adalah bahan basis gigi tiruan yang paling sering digunakan dalam dunia kedokteran gigi. Propolis atau lem lebah mengandung asam, ester, fenol dan flavonoid. Tujuan dari penelitian ini adalah untuk mengkaji pengaruh lama perendaman dalam larutan propolis terhadap kekerasan plat gigi tiruan termoplastik nilon.

Penelitian ini merupakan penelitian eksperimental laboratoris. Dua puluh empat plat termoplastik nilon dengan panjang 65 mm, lebar 10 mm dan tebal 2,5 mm dibagi kedalam 4 kelompok, yaitu kelompok kontrol (akuades 10 jam) dan kelompok perlakuan (ekstrak propolis 10 jam, 20 jam, dan 30 jam). Pengukuran kekerasan plat termoplastik nilon menggunakan *Mikro-vickers hardness tester*. Analisis data pada penelitian ini menggunakan uji *Shaphiro-wilk*, *Levenes's test*, ANAVA satu jalur dan uji LSD.

Hasil penelitian menunjukkan bahwa nilai kekerasan plat termoplastik nilon tertinggi terdapat pada kelompok kontrol akuades 10 jam ( $0,692 \pm 0,005$  HVN) dan kekerasan terendah pada kelompok propolis 30 jam ( $0,356 \pm 0,002$  HVN). Hasil uji ANAVA satu jalur menunjukkan terdapat perbedaan bermakna ( $p < 0,05$ ) antar perendaman dengan larutan propolis selama 10 jam, 20 jam, dan 30 jam. Uji LSD menunjukkan perbedaan yang bermakna ( $p < 0,05$ ). Kesimpulan penelitian ini adalah larutan propolis berpengaruh menurunkan kekerasan plat gigi tiruan termoplastik nilon dan perendaman dengan larutan propolis 10 jam memiliki tingkat kekerasan yang masuk dalam standar normal pada plat gigi tiruan termoplastik nilon.

Kata kunci: Larutan Propolis, Kekerasan, Termoplastik Nilon, Lama Perendaman

## ABSTRACT

Nylon thermoplastic was the most used denture base material in dentistry. Propolis or bee glue contained acids, esters, phenols, and flavonoids. The aim of this study was to find out the effect of soaking time in propolis solution to the hardness of thermoplastic nylon denture plate.

This study was a laboratory experimental research. The twenty-four thermoplastic plates with a 65 mm length, 10 mm width, and 2.5 mm thickness were divided into 4 groups, such as the control group (10 hours of aquadest) and the treatment group (propolis extract for 10 hours, 20 hours, and 30 hours). The hardness measurement of the nylon thermoplastic plate used Micro-vickers hardness tester. Data analysis used Shapiro-wilk test, Levene's Test, One-way ANOVA, and LSD test.

The results showed that the highest hardness value of nylon thermoplastic plate was the 10 hours of aquadest in control group ( $0.692 \pm 0.005$  HVN) and the lowest hardness was the 30 hours of propolis group ( $0.356 \pm 0.002$  HVN). The results of One-way ANOVA test showed a significant difference ( $p < 0.05$ ) between the soaking in propolis solution for 10 hours, 20 hours, and 30 hours. The LSD test showed a significant difference ( $p < 0.05$ ). The conclusion of this study was propolis extract had effects to reduce the hardness of the nylon thermoplastic denture plate and the soaking with propolis solution for 10 hours had a hardness level that is within the normal standard for nylon thermoplastic denture plate.

**Keywords:** Propolis Solution, Hardness, Thermoplastic nylon, Soaking Time