INTISARI

Termoplastik nilon yaitu poliamida hasil kondensasi asam diamina dan asam dibasa sebagai bahan basis gigi tiruan. Termoplastik nilon estetik dan memiliki kekuatan dan ketahanan baik, namun kekurangannya yakni penyerapan air yang tinggi. Daun serai dapur adalah tanaman yang memiliki kandungan yaitu fenol. Tujuan penelitian ini untuk mengkaji pengaruh lama perendaman dalam larutan ekstrak daun serai dapur (*Cymbopogon citratus*) terhadap kekasaran permukaan plat gigi tiruan termoplastik nilon.

Penelitian ini merupakan eksperimental laboratoris menggunakan 25 sampel plat gigi tiruan termoplastik nilon ukuran 65 x 10 x 2,5 mm. Sampel dibagi 5 kelompok perlakuan: kelompok direndam dalam akuades sebagai kontrol, dan kelompok direndam dalam ekstrak daun serai dapur 30% selama 5 jam, 10 jam, 15 jam, dan 20 jam. Kekasaran permukaan plat gigi tiruan termoplastik nilon diuji menggunakan profilometer (Starret, SR 300 *Surface Roughness Tester*, USA). Data yang diperoleh dianalisis menggunakan Uji Anava satu jalur dilanjutkan dengan *Post Hoc* LSD dengan tingkat kepercayaan 95%.

Hasil penelitian didapatkan nilai kekasaran permukaan optimum material kedokteran gigi pada termoplastik nilon yang direndam larutan ekstrak daun serai dapur 30% selama 15 jam yaitu 0,156 ± 0,289. Hasil uji Anava satu jalur menunjukkan perbedaan yang bermakna nilai kekasaran permukaan plat gigi tiruan termoplastik nilon antara lima kelompok. Uji *Post Hoc* LSD terdapat perbedaan yang bermakna. Kesimpulan penelitian ini yaitu lama perendaman dalam larutan ekstrak daun serai dapur (*Cymbopogon citratus*) 30% berpengaruh meningkatkan kekasaran permukaan plat gigi tiruan termoplastik nilon. Pengaruh kekasaran permukaan optimum material kedokteran gigi pada perendaman dalam larutan ekstrak daun serai dapur 30% selama 15 jam.

Kata kunci: termoplastik nilon, daun serai dapur, kekasaran permukaan

ABSTRACT

Thermoplastic nylon is a polyamide formed from a condensation reaction between diamine acid and dibasic acid, which is used as a denture base material. Thermoplastic nylon has several advantages, including aesthetic, strong and durable, but it also has the disadvantage of high water absorption. Lemongrass leaves are one of the plants that contain phenols. This research aims to examine the influence of immersion time in lemongrass leaf (Cymbopogon citratus) on the surface roughness of the thermoplastic nylon denture base.

This research is a laboratory experimental design using twenty-five samples of thermoplastic nylon denture base with a size of 65 x 10 x 2,5 mm. The samples were divided into five groups: the group that was immersed in distillled water as a control, and the group that was immersed in 30% lemongrass leaf extract for 5 hours, 10 hours, 15 hours, and 20 hours. The surface roughness of the thermoplastic nylon denture base was tested using a profilometer (Starret, SR 300 Surface Roughness Tester, USA). The data was analyzed using the One-Way ANOVA test, followed by the Post Hoc LSD test, with a 95% confidence level.

The experiment results showed that the optimum surface roughness for dental materials was thermoplastic nylon immersed in a 30% lemongrass leaf extract solution for 15 hours, that is, 0.156 ± 0.289. The results of the One-way ANOVA test showed there is a significant difference in the surface roughness of the thermoplastic nylon denture base between the five groups. The Post LSD test showed a significant difference. The conclusion of this research is that the duration of immersed the lemongrass leaf (Cymbopogon citratus) by 30% has an increased effect on the surface roughness of the thermoplastic nylon denture base. The optimum effect on surface roughness for dental materials is immersion in a 30% lemongrass leaf extract solution for 15 hours.

Key words: Thermoplastic nylon, lemongrass leaf, surface roughness