

ABSTRAK

PENGARUH PENGAPLIKASIAN *EDIBLE COATING* PATI SINGKONG (*Manihot utilissima*) TERHADAP KEKASARAN PERMUKAAN BASIS GIGI TIRUAN RESIN AKRILIK POLIMERISASI PANAS

Licha Permata Sari

Basis merupakan salah satu elemen penyusun gigi tiruan yang umumnya terbuat dari bahan resin akrilik polimerisasi panas. Bahan ini memiliki sifat fisik mudah terjadi porus sehingga dapat menyebabkan peningkatan kekasaran permukaannya. Kekasaran permukaan pada basis gigi tiruan dapat dihindari dengan pengaplikasian *edible coating* pati singkong sehingga porus pada permukaan dapat tertutup dan permukaan menjadi halus. Tujuan penelitian ini adalah mengetahui pengaruh pengaplikasian *edible coating* pati singkong (*M. utilissima*) terhadap kekasaran permukaan basis gigi tiruan resin akrilik polimerisasi panas. Jenis penelitian ini adalah eksperimental laboratoris dengan rancangan penelitian *post-test only control group design*. Sebanyak 48 plat resin akrilik polimerisasi panas terbagi menjadi 6 kelompok yaitu kelompok dengan pengaplikasian *edible coating* pati singkong 2,5%, 5%, 7,5%, 10%, 12,5%, dan tanpa pengaplikasian *edible coating* pati singkong. Hasil uji kekasaran permukaan menggunakan profilometer menunjukkan seluruh nilai rerata kekasaran permukaan kelompok perlakuan lebih rendah dibandingkan kelompok kontrol. Analisis data pada penelitian ini dilakukan menggunakan uji *One-Way ANOVA* kemudian dilanjutkan uji LSD. Hasil uji karakteristik SEM menunjukkan adanya gambaran porus pada kelompok kontrol maupun perlakuan dengan jumlah yang semakin berkurang seiring peningkatan konsentrasi pati singkong. Terdapat perbedaan nilai kekasaran permukaan yang bermakna antara kelompok perlakuan dengan kelompok kontrol, kelompok dengan konsentrasi paling optimal adalah kelompok yang diaplikasikan *edible coating* pati singkong konsentrasi 7,5%. Simpulan penelitian ini adalah terdapat pengaruh dari pengaplikasian *edible coating* pati singkong terhadap kekasaran permukaan basis gigi tiruan resin akrilik polimerisasi panas.

Kata kunci : Basis gigi tiruan, resin akrilik polimerisasi panas, *edible coating*,
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ABSTRACT

THE EFFECT OF CASSAVA STARCH EDIBLE COATING

(*Manihot utilissima*) APPLICATION ON THE SURFACE

ROUGHNESS OF HEAT POLYMERIZATION

ACRYLIC RESIN DENTURE BASE

Licha Permata Sari

*The base plate is one of the denture elements, which is usually made from heat polymerized acrylic resin. These materials have the physical properties of quickly being porous to cause an increase in surface roughness. Heat polymerized acrylic resin denture base can be applied cassava starch edible coating to cover the pores and reduce the surface roughness value. The purpose of this study was to determine the effect of the application of cassava starch (*M. utilissima*) edible coating on the surface roughness of the denture base of heat polymerized acrylic resin. This type of research is an experimental laboratory with a post-test only control group design. The research sample consisted of 48 heat polymerized acrylic resin plates divided into six groups, namely the group with the application of cassava starch edible coating 2,5%, 5%, 7,5%, 10%, 12,5%, and without application of cassava starch edible coating. The results of the surface roughness test using a profilometer showed that the overall mean value of the surface roughness of the treatment group was lower than the control group. Data analysis in this study was carried out using the One-Way ANOVA test and then continued with the LSD test. The results of the SEM characteristic test showed that there was porous in both of the control and treatment groups, with the amount decreasing as the concentration of cassava starch increased. There was a significant difference in surface roughness values between the treatment group and the control group. The group with the most optimal concentration was the group applied to the cassava starch edible coating with a concentration of 7.5%. This research concludes that there is an effect of the application of cassava starch edible coating on the surface roughness of the denture base of heat polymerized acrylic resin.*

Keywords : denture base, heat cured acrylic resin, edible coating, surface roughness

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