

INTISARI

Alginat adalah material cetak hidrokoloid ireversibel yang banyak digunakan. Salah satu sifat alginat yang penting adalah *recovery from deformation* (RFD). Alginat kemasan besar sering dikemas ulang dengan kantong plastik sebagai pengganti kemasan sekali pencetakan dan tersimpan dalam beberapa minggu. Penelitian ini bertujuan untuk mengetahui pengaruh lama penyimpanan alginat dalam kemasan ulang plastik segel terhadap RFD alginat.

Bahan utama penelitian adalah material cetak alginat (Hygedent®, Amerika Serikat) dan plastik polietilen (Apollo, Indonesia). Alginat kemasan besar dikemas ulang dengan plastik segel sebanyak 20 gram tiap kemasan ($N=20$). Sampel disimpan selama 4 (K.II), 5 (K.III), 6 (K.IV), dan 7 minggu (K.V) dengan kontrol (K.I) yaitu alginat yang tidak dikemas ulang ($n=5$). Penyimpanan dilakukan pada suhu ruang (28 ± 1)°C dan kelembapan $70\pm 10\%$. Sampel dimanipulasi secara mekanik, lalu dilakukan uji RFD sesuai ANSI/ADA spesifikasi nomor 18. Data persentase RFD alginat dianalisis menggunakan uji ANAVA satu jalur ($p=0,05$) dan $LSD_{0,05}$.

Hasil penelitian menunjukkan nilai rerata dan simpangan baku RFD alginat yaitu: $99,28\pm 0,18\%$ (K.I); $98,96\pm 0,21\%$ (K.II); $98,85\pm 0,20\%$ (K.III); $98,85\pm 0,27\%$ (K.IV); $98,78\pm 0,22\%$ (K.V). Hasil uji ANAVA satu jalur menunjukkan lama penyimpanan alginat dalam kemasan ulang plastik segel berpengaruh terhadap penurunan RFD alginat ($p<0,05$). Hasil uji $LSD_{0,05}$ menunjukkan terdapat perbedaan bermakna antara kelompok kontrol dengan perlakuan dan tidak berbeda bermakna antar kelompok perlakuan. Kesimpulan penelitian ini adalah lama penyimpanan alginat dalam kemasan ulang plastik segel berpengaruh terhadap penurunan RFD alginat.

Kata kunci: Alginat, *recovery from deformation*, alginat kemasan ulang, lama penyimpanan alginat.

ABSTRACT

Alginate is an irreversible hydrocolloid impression material that is commonly used. One of the important properties of alginate is recovery from deformation (RFD). Bulk packaging alginate is often repackaged in plastic bags for single impression packaging and stored for several weeks. The aim of this study is to investigate the effect of storage duration of repackaged alginate in sealed plastics towards the alginate's RFD.

The main materials were alginate impression materials (Hygedent®, USA) and polyethylene plastics (Apollo, Indonesia). Alginate was repackaged in sealed plastics in the weight of 20 grams per packaging (N=20). The samples were stored for 4 (K.II), 5 (K.III), 6 (K.IV), and 7 weeks (K.V) with alginate from bulk package as a control group (K.I) (n=5). The samples were stored under room temperature (28 ± 1)°C and $70\pm 10\%$ humidity. The samples were mechanically manipulated, then the RFD test was conducted in accordance with ANSI/ADA specifications number 18. The alginate's RFD percentage data were analyzed using one-way ANOVA ($p=0.05$) and $LSD_{0.05}$ test.

The results showed the mean and standard deviation of the alginate's RFD: $99.28\pm 0.18\%$ (K.I); $98.96\pm 0.21\%$ (K.II); $98.85\pm 0.20\%$ (K.III); $98.85\pm 0.27\%$ (K.IV); $98.78\pm 0.22\%$ (K.V). The results of one-way ANOVA test showed that the storage duration of repackaged alginate in sealed plastic affected the decrease in alginate's RFD ($p<0.05$). The results of $LSD_{0.05}$ test showed the significant difference between the control with treatment groups and did not difference significantly between treatment groups. The conclusion is the storage duration of repackaged alginate in sealed plastics affected the decrease in alginate's RFD.

Keywords: Alginate, recovery from deformation, repackaged alginate, alginate storage duration.