

## INTISARI

Alginat banyak digunakan dalam kedokteran gigi. *Setting time* merupakan sifat material cetak yang penting. Alginat kemasan besar sering kali dikemas ulang oleh penyuplai dalam kemasan ulang kecil dan disimpan dalam beberapa minggu. Penelitian ini bertujuan untuk mengetahui pengaruh lama penyimpanan alginat dalam kemasan ulang plastik sistem vakum terhadap *setting time*.

Penelitian dilakukan menggunakan bahan utama material cetak alginat (Hexalgin, Indonesia). Serbuk alginat dikemas ulang dengan plastik sistem vakum sebanyak 18 gram setiap kemasan (N=30). Sampel dibagi menjadi 5 kelompok perlakuan (n=6), dan dilakukan penyimpanan selama 0 (Kelompok A), 2 (Kelompok B), 3 (Kelompok C), 4 (Kelompok D), dan 5 minggu (Kelompok E). Sampel disimpan pada suhu ruang ( $28 \pm 1$ )°C dan kelembapan  $70\% \pm 10\%$ . Sampel dimanipulasi dengan *automatic mixer* dan dilakukan uji *setting time* sesuai dengan ANSI/ADA spesifikasi No. 18. Data dianalisis menggunakan ANAVA satu jalur dan LSD<sub>0,05</sub>.

Hasil penelitian menunjukkan rerata perubahan *setting time* alginat (detik) yaitu:  $100,50 \pm 4,18$  (0 minggu);  $100,17 \pm 3,97$  (2 minggu);  $98,67 \pm 4,84$  (3 minggu);  $95,33 \pm 2,73$  (4 minggu);  $93,50 \pm 2,07$  (5 minggu). Uji ANAVA satu jalur menunjukkan nilai  $F=4,169$  ( $p < 0,05$ ) maka lama penyimpanan alginat dalam kemasan ulang plastik sistem vakum berpengaruh terhadap penurunan *setting time*. Hasil uji LSD<sub>0,05</sub> menunjukkan bahwa terdapat perbedaan bermakna antara Kelompok 4 dan 5 minggu dengan Kelompok 0, 2 dan 3 minggu. Kesimpulan penelitian ini adalah lama penyimpanan alginat dalam kemasan ulang plastik sistem vakum berpengaruh terhadap penurunan *setting time*.

Kata kunci: Alginat, *setting time*, alginat kemasan ulang, lama penyimpanan alginat, sistem vakum

## **ABSTRACT**

*Alginate are widely used in dentistry. Setting time is an important impression material property. Bulk alginate is often repackaged by supplier in small repackages and stored for several weeks. This study aims to determine the effect of storage duration of repackaged alginate in vacuum sealed plastic towards setting time.*

*The main materials were alginate impression material (Hexalgin, Indonesia). Alginate was repackaged in vacuum sealed plastic for 18 grams per packaging (N=30). Samples were stored for 0 (Group A), 2 (Group B), 3 (Group C), 4 (Group D), and 5 weeks (Group E) (n=6). Samples were stored at room temperature ( $28 \pm 1$ ) $^{\circ}$ C and  $70\% \pm 10\%$  humidity. Samples were manipulated using automatic mixer and setting time test was conducted in accordance with ANSI/ADA specification No. 18. Data were analyzed using one-way ANOVA and LSD0.05.*

*The results showed the mean change in alginate setting time (seconds) was:  $100.50 \pm 4.18$  (0 weeks);  $100.17 \pm 3.97$  (2 weeks);  $98.67 \pm 4.84$  (3 weeks);  $95.33 \pm 2.73$  (4 weeks);  $93.50 \pm 2.07$  (5 weeks). The one-way ANOVA test showed value of  $F=4.169$  ( $p<0.05$ ) so storage duration of repackaged alginate in vacuum sealed plastic affected the decrease in setting time. The LSD0.05 test showed significant difference between Group 4 and 5 weeks and Group 0, 2, and 3 weeks. The conclusion is storage duration of repackaged alginate in vacuum sealed plastic affected the decrease in setting time.*

*Keywords: Alginat, setting time, repackaged alginat, alginat storage duration, vacuum seal*