

ABSTRAK

PENGARUH PERENDAMAN *ELASTOMERIC CHAIN* DALAM EKSTRAK KULIT DURIAN (*Durio zibethinus Murr*) KONSENTRASI 50% TERHADAP PENURUNAN GAYA REGANG (*FORCE DECAY*)

Audria Elfar Dina

Elastomeric chain merupakan material ortodontik cekat berbahan dasar *polyurethane elastomer*. Polimer penyusunnya merupakan yang berbentuk ikatan silang (*cross link*). Saat diregangkan dan menerima beban tarik, ikatan *elastomeric chain* tidak stabil yang mengakibatkan terjadinya deformasi substansi secara permanen peristiwa tersebut mengakibatkan *elastomeric chain* mengalami penurunan gaya regang (*force decay*). Ikatan tersebut juga dapat terhidrolisis apabila *elastomeric chain* berkontak dengan cairan, yaitu saliva dan ekstrak kulit durian (*Durio zibethinus Murr*). Penelitian ini bertujuan untuk mengetahui pengaruh perendaman *elastomeric chain* dalam ekstrak kulit durian konsentrasi 50% terhadap penurunan gaya regang (*force decay*). Jenis penelitian yang digunakan yaitu *experimental laboratoris* dengan *pretest-posttest control group design*, dilakukan dengan membagi 3 kelompok sampel dengan masing-masing kelompok berjumlah 8 sampel. Kelompok perlakuan yaitu kelompok yang dibentangkan dan direndam dalam saliva buatan pH 7,0 + ekstrak kulit durian konsentrasi 50%, dibentangkan dan direndam dalam saliva buatan, serta kelompok kontrol yang dibentangkan tanpa direndam, kemudian diinkubasi pada suhu 37°C selama 24 jam. Gaya diukur menggunakan *force gauge*. Uji *One Way ANOVA* didapatkan hasil penurunan gaya regang pada kelompok P2 sebesar 4,76 N. Penurunan gaya regang paling rendah terdapat pada kelompok perlakuan P1 dengan nilai 3,64 N. Dapat disimpulkan bahwa perendaman *elastomeric chain* dalam saliva buatan pH 7,0 dan ekstrak kulit durian konsentrasi 50% berpengaruh terhadap penurunan gaya regang (*force decay*) *elastomeric chain*.

Kata Kunci: *Durio zibethinus Murr.*, *elastomeric chain*, penurunan gaya

ABSTRACT

THE EFFECT OF IMMERSION ELASTOMERIC CHAIN IN THE EXTRACT DURIAN'S SKIN (*Durio zibethinus Murr*) 50% CONCENTRATION TOWARDS FORCE DECAY

Audria Elfar Dina

*Elastomeric chain is a fixed orthodontic material with polyurethane elastomers based. The constituent polymers were low molecular weight polymers which form a cross link. When a tensile load received, the bond was unstable, then the substance undergo a permanent deformation which caused the elastomeric chain to experience a decrease in force. These bonds can also be hydrolyzed if the elastomeric chain get contact with liquids, like saliva and extract durian's skin (*Durio zibethinus Murr*). This study aimed to determine the effect of immersing extract durian's skin with a 50% concentration on force decay of elastomeric chain. The design used of this study was true laboratory experimental with pre-test post-test control group design by dividing 3 sample groups with 8 samples each group. The treatment group are; immersed in artificial saliva with 7,0 pH and extract durian's skin with a 50% concentration, immersed in artificial saliva with 7,0 pH, in addition the control group were chain stretching and without immersing, all variant are incubated at 37°C for 24 hours. The force decay was measured by force gauge. While the One Way ANOVA test obtained the highest force decay is on P2 with value 4,76 N and the lowest force decay value is P1 with value 3,64 N, which means that there was a significant difference in force decay. It can be concluded that the elastomeric chain immersed in artificial saliva with 7,0 pH and extract durian's skin with a 50% concentration proven significant effect on the force decay of elastomeric chain.*

Keywords: *Durio zibethinus Murr.*, elastomeric chain, force decay