# ABSTRAK

Perubahan warna gigi disebabkan faktor intrinsik dan ekstrinsik. Penggunaan bahan *bleaching* dapat menimbulkan efek samping seperti gigi sensitif dan iritasi mukosa. Diperlukan bahan alternatif yang lebih aman seperti buah nanas (*Ananas comosus L, Merr*) yang mengandung *enzim bromelin* dan buah apel (*Mallus sylvestris Mill*) yang mengandung asam malat. Keduanya berpotensi dalam memutihkan gigi. Tujuan penelitian untuk mengetahui perbedaan efektivitas ekstrak nanas dengan ekstrak apel sebagai bahan pemutih gigi alami.

Metode penelitian laboratorium eksperimental dengan *pre-post test only with control group design*. Teknik pengambilan sampel adalah *simple random sampling*. Sampel 27 buah gigi premolar rahang atas pasca ekstraksi. Pengukuran warna gigi sebelum dan sesudah pengolesan ekstrak menggunakan spektrofotometer. Data sebelum dan sesudah pengolesan ekstrak apel dan ekstrak nanas dianalisis statistik dengan *One Way Anova.*

Hasil penelitian, terdapat perbedaan signifikan ($P<0,05$) antara ekstrak apel 100%, ekstrak nanas 100%, dan karbamid peroksida 10% dengan rata-rata perbedaan warna gigi 6,60±0,9 ; 3,78±0,9 dan 1,57±0,74. Hasil uji *Post Hoc LSD* diperoleh perbedaan bermakna ($p<0.05$) antara kelompok perlakuan ekstrak apel 100% dengan karbamid peroksida 10%, ekstrak buah nanas 100% dengan karbamid peroksida 10% dan ekstrak apel 100% dengan ekstrak nanas 100%.

Kesimpulan terdapat perbedaan signifikan keputihan gigi antara ekstrak apel 100%, ekstrak nanas 100% dan karbamid peroksida 10% sebelum dan sesudah pengolesan ekstrak. Ekstrak apel 100% lebih efektif memutihkan gigi dibandingkan ekstrak nanas 100% dan karbamid peroksida 10%.



**Kata Kunci**: nanas, apel, karbamid peroksida 10%, asam malat, enzim bromelin, pemutih gigi, kedokteran gigi.

## ABSTRACT

*Tooth discoloration was caused by intrinsic and extrinsic factors. The use of bleaching material can cause side effects such as sensitive teeth and mucosal irritation. Safer alternative materials such as pineapple (Ananas comosus L, Merr) were needed, it contained bromelain enzymes and apples (Malus sylvestris Mill) containing malic acid. Both had the potential to whiten teeth. The objective of this study was to determine the difference between the effectiveness of pineapple extract and apple extract as a natural tooth whitening agent.*

*The research method was an experimental laboratory with a pre-post test only with a control group design. The sampling technique was simple random sampling. The sample was 27 post-extraction maxillary premolar teeth. The measurement of tooth color before and after applying the extract was by using a spectrophotometer. Data before and after the application of apple extract and pineapple extract were analyzed statistically by using One Way Anova.*

*The results of the study, there was a significant difference ($P < 0.05$) between 100% apple extract, 100% pineapple extract, and 10% carbamide peroxide with an average tooth color difference of 6.60 ± 0.9; 3.78 ± 0.9 and 1.57 ± 0.74. From Post Hoc LSD test results, it was obtained a significant difference ($p < 0.05$) between the treatment groups of 100% apple extract with 10% carbamide peroxide, 100% pineapple fruit extract with 10% carbamide peroxide and 100% apple extract with 100% pineapple extract.*

*The conclusion was there was a significant difference in teeth whiteness between 100% apple extract, 100% pineapple extract and 10% carbamide peroxide before and after applying the extract. Apple extract was 100% more effective in whitening teeth than pineapple extract 100% and carbamide peroxide 10%.*



***Keywords**: pineapple, apples, carbamide peroxide 10%, malic acid, bromelain enzyme, teeth whitening, dentistry.*