

ABSTRACT

*In addition to being used to bleach teeth, acid content in tomato juice can cause tooth erosion. Tooth erosion is one of causes of the damages of tooth structure and it can cause the tooth loss or off as the process of decreasing the tooth hardness level. The study aims to find out the differences of tooth hardness level based on the immersion duration in tomato juice (*Licopersicon esculentum* Mill.) with concentration of 50% for 2, 4, 6, and 8 hours.*

Type of study is an experimental laboratory. The number of samples in the study are 24 premolar tooth samples that are divided into 4 groups. Group 1, the samples is immersed in tomato juice with concentration of 50% for 2 hours, while group 2, group 3 and group 4 they are immersed for 4, 6, and 8 hours. The tooth hardness before and after the immersion is measured with Micro Vickers Hardness Tester, then it is analyzed by using paired t-test and one way anova and also post hoc LSD test.

The study result indicates that there is an effect of tomato juice with concentration 50% toward change of hardness of tooth enamel based on the duration ($p < 0,05$). The decreasing change of level of tooth enamel hardness after immersion for 2, 4, 6, and 8 hours each of them are 32,58 kg/mm²; 62,30 kg/mm²; 94,74 kg/mm² and 132,75 kg/mm². This indicates that the longer the tooth to be immersed the lower the hardness of tooth enamel surface, because of the tooth contacts for a long time with acid drinks so that the more erosion occurs.

Conclusion : the duration of immersion has a effect on the decreasing of tooth enamel surface hardness.

Keywords: tomato juice with concentration of 50%, the tooth hardness.