

Pengaruh aplikasi substrat ikan teri pada permukaan email terhadap remineralisasi email

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Abstrak

Topical fluoridation recently has become the method of choice in caries prevention. Fluoride plays an important role not only in the formation of fluoroapatite, but also promoting enamel remineralization. Enamel remineralization occurs when the enamel environment is supersaturated with calcium and phosphate ions. When the pH level decreases, the rise of H⁺ ions, the hydroxyl of the apatite will be drawn out from the enamel, and substituted by fluoride ion, this condition will cause apatite breakdown and both calcium and phosphate will be released to the enamel environment. The release of those minerals, will cause supersaturation and promoting enamel remineralization. In nature fluoride can be found in sea fishes, such like teri (anchovy, *Stolephorus* sp) fishes. Teri fish has about 17-38 ppm of fluoride content. The high fluoride content of teri fish, led this research to know the influence of its application to the enamel surface on remineralization process, measured with enamel surface roughness and hardness tests. Seven enamel discs, 5 x 10 mm (W and L) obtained from 4 impacted third molars, were used in the research. One disc used as initial control, and 6 discs divided into 2 groups, used as experiment groups. All of the experimental discs demineralized using 50% phosphoric acid, then 3 of them were applied with teri substrate, whether other 3 discs applied with non ionic aquadest. All experimental discs, then immersed in the remineralization solution containing calcium phosphate stabilized with casein phosphopeptide. The cycle above repeated for 26 times. Analyses of the specimens, were done using Surfcom for enamel roughness and Buehler microhardness tester for surface hardness. Surface roughness of the teri group is 1,78 μm compare to the initial group (215 μm), and enamel surface microhardness of the teri group is (376 VHN), significantly differ from the control group, 358 VHN. Conclusion: Based on this research result, it can be concluded that : Teri fish substrate application on enamel surface causes the enhancement of enamel remineralization, as evaluated by surface roughness and micro hardness.