

## INTISARI

*White spot* merupakan lesi awal karies akibat proses demineralisasi email. Proses demineralisasi dapat dihentikan dengan aplikasi agen remineralisasi yang mengandung kalsium pada permukaan gigi. Sisik ikan gurami memiliki kandungan kalsium yaitu 5,0-8,6%. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi pasta nanokalsium dari sisik ikan gurami terhadap kepadatan dan kekerasan gigi marmut yang mengalami *white spot*.

Tiga puluh ekor marmut, usia 3-4 bulan, berat 300-350 gram sebagai subjek. Permukaan labial gigi insisivus rahang bawah dibentuk *white spot* dengan etsa asam fosfat 37%. Pasta nanokalsium sisik ikan gurami (kelompok perlakuan) dan *Casein Phosphopeptide-Amorphous Calcium Phosphate* (kelompok kontrol positif) diaplikasikan dua kali sehari selama 6 hari pada area *white spot*, sedangkan kelompok kontrol negatif tidak diberikan perlakuan. Pada hari ke 7, gigi insisivus dicabut kemudian dilakukan uji kepadatan gigi menggunakan mikroradiografi dan uji kekerasan gigi menggunakan *Vicker's Hardness Tester*. Data yang terkumpul dianalisis menggunakan uji ANOVA satu jalur dan LSD.

Hasil uji ANOVA satu jalur menunjukkan bahwa terdapat perbedaan signifikan pada uji kepadatan dan kekerasan gigi antarkelompok ( $p < 0,05$ ). Uji LSD menunjukkan terdapat perbedaan signifikan antara kelompok kontrol negatif dan kelompok perlakuan serta antara kelompok kontrol negatif dan kelompok kontrol positif. Aplikasi pasta nanokalsium dari sisik ikan gurami dapat meningkatkan kepadatan dan kekerasan gigi dengan *white spot*.

Kata Kunci: *White spot lesion*, remineralisasi, nanokalsium, sisik ikan gurami

## **ABSTRACT**

*White spot is an initial lesion of caries process as a result of enamel demineralization. Demineralization process can be terminated by applying remineralization agents containing calcium on the tooth surface. Gourami scale contains 5.0 to 8.6% calcium. The aim of this study was to determine the effect of gourami scales nanocalcium paste on density and hardness of guinea pigs teeth with white spot.*

*Thirty guinea pigs, aged 3-4 months, weigh 300-350 grams were included in this study. Thirty-seven percent phosphoric acid was applied on the labial surface of the mandibular incisor to induce the white spot. Gourami scales nanocalcium paste (treatment group) and Casein Phosphopeptide-Amorphous Calcium Phosphate (CPP-ACP) (positive control group) were then applied onto the white spot area twice a day for 6 days, while all the teeth in the negative control group were left untreated. On the seventh day, the teeth were extracted, and the density of the teeth was measured using microradiography while the hardness of the teeth was measured using Vicker's Hardness Machine. The data were analysed using one way ANOVA followed by LSD test.*

*One way ANOVA result showed significant differences of the density and hardness of the teeth among groups ( $p < 0,05$ ). LSD test revealed significant differences between the negative control compared to the treatment group as well as between the negative control compared to the positive control group. Within the limitation of this study, it is concluded that gourami scales nanocalcium paste can improve the density and hardness of teeth with white spot lesion.*

*Keywords: White spot lesion, remineralization, nanocalcium, gourami scales*