

INTISARI

Kawat ortodonti *stainless steel* merupakan salah satu komponen utama dalam perawatan ortodonti lepasan yang umumnya mengandung kromium dan nikel. kawat *stainless steel* dapat mengalami korosi karena pengaruh dari lingkungan rongga mulut maupun diluar rongga mulut. Kawat ortodonti *stainless steel* yang berada di dalam rongga mulut dapat mengalami korosi dengan adanya pelepasan ion Cr dan Ni yang bersifat merugikan bagi tubuh manusia dan kawat ortodontik itu sendiri. Penelitian ini bertujuan untuk mengetahui pengaruh lama perendaman kawat ortodonti *stainless steel* dalam minuman berkarbonasi terhadap laju korosi kawat. Jenis penelitian ini adalah eksperimental laboratoris. Pengujian dilakukan dengan penimbangan berat kawat untuk mengetahui laju korosi kawat. Sembilan kelompok dengan masing-masing berisi 3 sampel kawat. Satu kelompok direndam dalam saliva tanpa minuman berkarbonasi dan kelompok lain direndam dalam saliva dengan minuman berkarbonasi selama 6 jam 56 menit. Data hasil penelitian kemudian dianalisis dengan One Way Anova.

Hasil penelitian menunjukkan adanya perbedaan signifikan ($p < 0,05$) lama perendaman kawat ortodonti *stainless steel* dalam minuman berkarbonasi terhadap laju korosi kawat. Hasil tersebut menunjukkan adanya pengaruh lama perendaman kawat ortodonti *stainless steel* dalam minuman berkarbonasi terhadap laju korosi kawat, sehingga dapat disimpulkan bahwa semakin lama perendaman kawat ortodonti *stainless steel* dalam minuman berkarbonasi, berat kawat kawat semakin berkurang.

Kata kunci : lama perendaman, kawat ortodonti *stainless steel*, minuman berkarbonasi, laju korosi kawat

ABSTRACT

Stainless steel orthodontic wire was the main component in removable orthodontic care that commonly contained chromium and nickle. Stainless steel wire could get corrosion due to the environment, either inside mouth cavity or outside mouth cavity. The stainless steel orthodontic wire inside mouth cavity could cause corrosion toward Cr ion and Ni ion that was detrimental to a human's body and the orthodontic wire itself. This research aimed at finding out the influence of soaking time of stainless steel orthodontic wire in carbonated drinks toward wire corrosion rate. Type of this research was experimental laboratory research. The testing was done by weighing wire to figure out the wire corrosion rate. There were nine groups, each of which contained 3 samples of wire. One group was soaked in without carbonated drinks and in another group, the wires were soaked in saliva with carbonated drinks for 6 hours 56 minutes. The data of this research were then analyzed by using One Way Anova.

The results of this research show that there is a significant difference ($p < 0.05$) of soaking time of stainless steel orthodontic wire in carbonated drinks toward wire corrosion rate. It can be concluded that there is an influence of soaking time of stainless steel orthodontic wire in carbonated drinks toward wire corrosion rate, so that the longer soaking time of the stainless steel orthodontic wire in the carbonated drink is, the less weight of the wire is.

Key Words : *soaking time, stainless steel orthodontic wire, carbonated drinks, wire corrosion rate*