

OP-15

**Effect of Sargassum sp. effervescent immersion on Acrylic hardness using CLSM (Confocal Laser Scan Microscopy)**

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**ABSTRACT**

**Background:** The ideal denture base materials include aesthetics, strength, stiffness, hardness, high resistance, and surface roughness. Hardness is often used as an indicator of the ability of a material to withstand abrasion or erosion caused by denture cleaning techniques with abrasive materials and is needed to prevent possible fractures of the denture base. Denture cleaning materials on the market are available in several forms, one of which is effervescent granules. Effervescent granules of brown algae (*Sargassum sp*) have been shown to be effective in inhibiting the formation of *Streptococcus mutans* and *Candida albicans* colonies on acrylic resin plates, this shows the potential of effervescent granules to be an alternative denture cleanser.

**Objective:** Analyzing the effect of Brown Algae (*Sargassum sp*) effervescent and Alkaline Peroxide as cleaning agents on the hardness of acrylic resin plates. **Method:** This research was a laboratory experimental study with 27 samples of acrylic resin plates divided into three groups. Group A was immersed in Brown Algae (*Sargassum sp*) effervescent granules. Group B was immersed in Alkaline Peroxide (Sodium Perborate) and group C was immersed in Aquadest. Immersion was carried out for 15 minutes per day and lasted for 4 consecutive days and every day each solution was replaced with a new one. Hardness was measured using CLSM (Confocal Laser Scan Microscopy). **Results:** The Wilcoxon test on the mean hardness of each group showed an insignificant difference in hardness in the three experimental groups before and after immersion with  $p$  value  $> 0.05$ . **Conclusion:** *Sargassum sp.* effervescent granule solution and Alkaline Peroxide solution does not affect the hardness of the acrylic base, so it is good to use as a denture cleaning agent.

**Keywords:** hardness, acrylic resin, brown algae