

**Antibacterial Activity of a Developed Lemongrass
(*Cymbopogon citratus*) Mouth Rinse Prepared at Different
Concentrations**

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Abstract: This study determined the antibacterial activity of a developed lemongrass mouth rinse containing 25% and 50% lemongrass oil concentration against *Aggregatibacter actinomycetemcomitans*. Lemongrass was dehydrated using the Multi-commodity Heat Pump Dryer. Hydro-distillation method was used to extract the oil from the dehydrated lemongrass. Mouthwash was prepared at 25% and 50% lemon grass oil concentrations, based on the defined guidelines from the American Dental Association Council on Dental Therapeutics and Remington's Pharmaceutical Science. The Kirby Bauer Disk Diffusion Susceptibility test was used to determine the antibacterial effect of the developed mouth rinse. The results obtained were analyzed using the United States Pharmacopeia Biological Reactivity Test *in vitro* of 2007. Results showed that the zones of inhibition brought about by 50% lemongrass oil concentration mouthwash against *Aggregatibacter actinomycetemcomitans*, had a mean diameter of 35 mm. as compared to the 23.6 mm diameter in Chlorhexidine and 20.3 mm in the 25% lemongrass oil treatment. The negative control had a mean diameter of 8 mm. Reactivity scores revealed that the 50% lemongrass oil concentration mouthrinse has a Grade 4 severe reactivity as compared to the 25% lemongrass oil concentration as well as the positive and negative control. Tukey HSD results also showed that of the four treatments, *A. actinomycetemcomitans* is more susceptible to the 50% lemon grass oil mouthwash than the rest of the treatments.

Keywords: Antibacterial, hydro-distillation, biological reactivity test, Kirby Bauer disk diffusion susceptibility test, zones of inhibition