

TITLE: ANTIMICROBIAL EFICACY OF BRAZILIAN *AZADIRACHTA INDICA* (NEEM) EXTRACT AND MOUTHWASH AGAINST ORAL PATHOGENIC MICROORGANISMS.

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ABSTRACT:

The aim of this study was to verify the *in vitro* antimicrobial efficacy of Brazilian *Azadirachta indica* (neem) extracts against oral microorganisms. Neem leaves were obtained in a plantation located in the city of Itinga, Jequitinhonha Valley, State of Minas Gerais, Southeastern Brazil, Latitude 16° 36'47S, Longitude 41° 45' 55W, collected in the months of March and April. 100mg of neem leaf powder was added to 100mL of 70% ethanol. After shaking 2 hours, the extract was filtered, stored in a dark vial and left under refrigeration at 40°C. Ethanolic extract and mouthwash containing 5% of neem were developed at Bioneem Comercio e Tecnologia Ltd. Laboratory. MIC (microdilution) and agar diffusion microbiological tests were done according to CLSI standards. Standard microorganisms ATCC-*Streptococcus mutans*, *Lactobacillus casei*, *Aggregatibacter actinomycetemcomitans*, *Fusobacterium nucleatum*, *Enterococcus faecalis*, *Porphyromonas gingivalis*, *Staphylococcus aureus*, *Candida albicans*, *Neisseria gonorrhoeae* were used. The inoculum was prepared from an overnight culture of each microorganism containing 1.0x10⁵ CFU-mL of 5 McFarland standard scale. Blanc disks were soaked with 20µL of each neem-containing product and placed on the agar seeded with the microorganisms. The cultures were then left for 24 hours at 37°C in environments suitable for each microorganism. After that time, the zones of inhibition were measured and the means and standard deviations were calculated. All micro-organisms were sensitive to neem. There were differences in MIC between microorganisms (Table 1). Neem extract and mouthwash showed to be an efficient antimicrobial agent against oral microorganisms when compared with Chlorhexidine.

Keywords: *Azadirachta indica*, mouthwash, antimicrobial tests, oral microorganisms, MIC.

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