

Title: INVESTIGATION OF ANTIMICROBIAL ACTIVITY OF ESSENTIAL OIL FROM AROMATIC PLANTS AGAINST CARIOGENIC BACTERIAS

Authors Moura, L.B.¹, Souza, M.G.¹, Santos, A.S.¹

Institution ¹UFPA – Universidade Federal do Pará (Rua Augusto Correa nº01-Campus Guamá-66.075.110-Belém – PA)

Abstract:

The balance of the oral biofilm is essential for the prevention of caries. In recent years, dentistry has advanced in pharmacobotany, specifically in the control of this biofilm, investigating the microbial flora and using vegetable extracts for combating oral disease. Plants like *Chenopodium ambrosioides* (mastruz) and *Campechianum ocimum* (Alfavaca) are part of folk medicine in Brazil and for being aromatic plants have essential oils with activity against microorganisms. In this respect, researches have been performed to develop products that promote oral health, evaluating the antimicrobial activity of essential oils of these species against cariogenic bacteria. The plants were obtained in local market and was sent to the laboratory for processing and extraction of essential oil. The leaves were washed, dried for 2 days at 30 ° C and weighed and the essential oil obtained by hydrodistillation in Clevenger type system for 3h. The biological activities were assayed by the method of diffusion in agar plate using paper discs impregnated with oil at concentrations of 1, 5, 10, 25, 50 and 75%(v/v) diluted solution of 0.05%(v/v) Tween-80. *Lactobacillus casei*, *Lactobacillus fermentum*, *Streptococcus mutans* and *Streptococcus oralis* were used. Bacterial suspensions were prepared according to the McFarland standard 0.5 (1×10^5 CFU / ml). As a positive control was adopted chlorhexidine 0.12% (v/v). The results showed that the mastruz from the solution containing 25% of essential oil was more effective when compared to the positive control against the *S. mutans*, *L. casei* and *L. fermentum*, showing inhibition zones ranging from 1.5cm (25%) to 5cm (75%); while the positive control showed halos equal to or less than the sample containing the essential oil. But the alfavaca oil showed satisfactory result with inhibition zones equal to or less than the control. In this paper, it is emphasized that the use of essential oils may be an alternative against cariogenic microorganisms.

Keywords: oral biofilm, essential oils, biological activities, *Chenopodium ambrosioides*, *Ocimum campechianum*

Development agency: FAPESPA, CNPq, CAPES