DETERMINATION OF FREE FATTY ACIDS FOUND IN *CAPSICUM CHINENSE*, AN ALTERNATIVE AS ANTIMICROBIAL AGENTS.

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Key words: fatty acids, free fatty acids, antimicrobial activity

Introduction. The biological importance from habanero pepper has been recognized recently by demonstrating activities such as insecticidal, antifungal, antibacterial, anti-inflammatory, antispasmodic, analgesic, anticatarrhal and antioxidant (1). A method for extracting fatty acids from habanero pepper "*Capsicum Chinense*" in different phases of mature, the transformation of them on free fatty acids, the composition analysis of each one by Gas Cromatography and prove their antimicrobial properties on mixture is described on this research.

Methods. Three varieties of samples with different phases of mature from habanero pepper were purchased in the locality from the state. The samples were extracted whit hexane by Soxhlet extraction during 0.9 hrs. The transformation to methyl sters was made using a protocol for esterification of the free fatty acids to accord Morrison (2). The samples of free fatty acids obtained from the pair of protocols previously described, were injected into a Gas Chromatograph Perkin Elmer Autosystem XL with flame ionization detector, capillary column EC- Wax (30m x 0.25mm and 0.25 µm) and subsequently were proved for measure the antimicrobial activity against S. Epidermides ATCC 12228, S. Aureus ATCC 25923, E. Faecalis ATCC 29212, E. Coli ATCC 25922. For this procedure was used the agar diffusion technique.

Results. From the extraction with hexane by soxhlet equipment was obtained approximately 3.2 g of oil for each 25 g of dry sample. The free fatty acids profiles are shown in Figure 1 where the majority of the peaks appear with retention times between 17 min to 70 min. In the phase of antimicrobial activity, by a qualitative analysis we can warn the antimicrobial activity with a bacteriostatic effect in the majority of bacteria except for S. Aureus where it is observed a bactericide effect in the inhibition halo with a quantity of sample at 0.05% from the total obtained by the protocol.

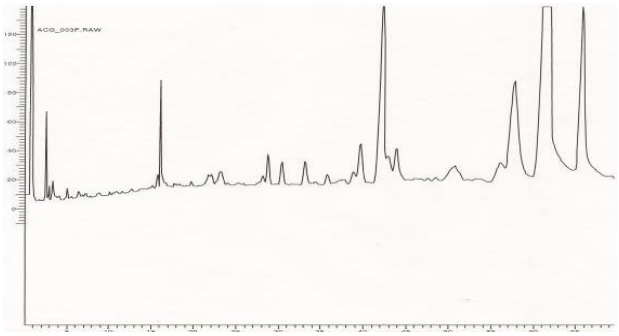

Fig.1 Chromatogram obtained from a sample with an immaturity grade

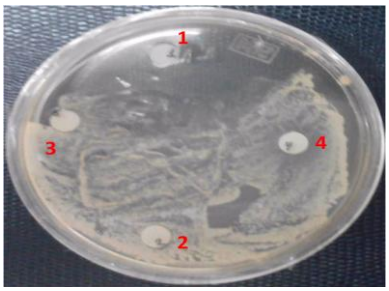

Fig.2 Antimicrobial Activity from Free Fatty Acids obtained against S. Aureus Bacteria after 24 hrs of growth. We observe by number: 1.penicillin, 2. Hexane (no inhibition demonstrated), 3. FFA from a mature grade, 4. FFA from an immature grade.

Conclusions. This paper concludes that the free fatty acids obtained from habanero pepper are a great proposal as antimicrobial agents due to the positive response when were tested against all the bacteria established for this research, demonstrating bacteriostatic effect for the majority of the bacteria except S. Aureus which showed a bactericide effect.

Acknowledgements. CONACYT for financing the project and the scholarship to the student Ibis de Martin Vargas Paredes.

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