

TITLE: ANTIMICROBIAL ACTIVITY *IN VITRO* OF EXTRACTS OF *Moringa oleifera* AND *Schinus terebinthifolius*

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SUMMARY:

The misuse of antibiotics on the market has contributed to the selection of several super-resistant bacteria. Therefore, there is a rush to search for new antimicrobial agents. Compounds with potential antimicrobial properties are produced by plants secondary metabolism, so the researches about the use of plant extracts as antimicrobial agents has increased. However, there is a lack of standardization of methodologies in these surveys, which makes it difficult to compare results. In this way, the present study aimed to analyze the *in vitro* antimicrobial potential of *Moringa oleifera* extract and *Schinus terebinthifolius* oil against pathogenic microorganisms. In addition, the aim of the project was to compare diffusion methodologies for agar per well and for paper disk. The extract of *M. oleifera* was obtained by extraction with Soxhlet apparatus using hexane, followed by rotavaporation of the solvent. The oil of *S. terebinthifolius* was obtained by hydrodistillation. In both extractions, the products were obtained from the dried fruit. The *in vitro* tests were carried out using diffusion methodologies, agar per well and disk paper, against ten common bacteria in alimentary toxoinfections. Inhibition was considered when formation of halos larger than 13 mm in diameter occurred. The tests were done in triplicate, followed by Analysis of Variance and Tukey test. The *M. oleifera* extract inhibited the growth of the following strains: *Serratia marcescens* and *Listeria monocytogenes*. On the other hand, *S. terebinthifolius* oil inhibited *Escherichia coli* classical enteropathogenic, *Listeria monocytogenes*, *Serratia marcescens*, *Shigella flexneri*, *Staphylococcus epidermis*, *Staphylococcus aureus*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Enterococcus faecalis* and *Escherichia coli* (CDL EDL 1284). Regarding the methodologies tested, the use of the agar diffusion tests per well as a form of qualitative selection is indicated, since the tests with this methodology presented smaller standard deviation. Among the two plants studied, *S. terebinthifolius* presented high antimicrobial potential, and its crude essential oil was able to inhibit nine of the ten strains tested. Thus, the antimicrobial activity of *S. terebinthifolius* reported in this work indicates the importance of further studying its essential oil in order to develop new drugs from its compounds.

KEYWORDS: vegetable extracts, agar diffusion, alimentary toxoinfections.

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