TITLE: MINIMUM INHIBITORY AND BACTERICIDAL CONCENTRATIONS OF *HO WOOD* (*CINAMONUM CAMPHORA*) ESSENTIAL OIL AGAINST BACTERIALS OF INTEREST IN THE FOOD AND CLINIC AREA.

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Originally from China the *Cinnamomum camphora* plant or popularly known as *Ho Wood* is characterized by presenting a large amount of monoterpene linalool, a compound known to have insect repellent activity and used on the cosmetics industry. Although there are reports of the antimicrobial activity of *C. camphora* essential oil, there are few studies determining the bactericidal concentrations of this compound in different bacteria of clinical and food interest. In this way, the antimicrobial effect of this substance in four bacterial strains was evaluated: *Escherichia coli* (clinical isolated*)*, *Staphylococcus aureus* (clinical isolated), *Salmonella enterica subsp enterica serovar Enteritidis (ATCC 13076)* and *Pseudomonas aeruginosa* (water of vivarium)*.* The methodology for determination of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) was performed according to the Clinical and Laboratory Standards Institute (CLSI, 2009) using the broth microdilution technique. All experiments were conducted in triplicate and the bacterial concentration of the initial inoculum adjusted according to 0.5 MC Farland scale. *C. camphora* oil was obtained by the steam distillation process of the wood having a colorless liquid. Twelve concentrations of the oil were evaluated, between 200 and 0.09 µL/mL. The Ampicillin and Gentamicin antibiotics were used as positive control with concentrations varying between 50 and 0.02 µg/mL. According to the results the bacterium *E. coli* showed a greater sensitivity to oil with MIC of 0.19 µL/mL and MBC of 0.39 µL/mL. Growth of *S. enterica* was inhibited with a concentration of 0.39 µL/mL and cells were completely killed with 0.39 µL/mL of the oil. *S. aureus* had a MIC of 0.78 µL/mL and MBC of 3.12 µL/mL. The bacterium *P. aeruginosa* had growth inhibition with only 3.12 µL/mL of oil, however, the bactericidal activity occurred only at 25 µL/mL, demonstrating that this bacterium is more resistant to the *C. camphora* essential oil. The latter proved to be bacteria resistant to the antibiotic ampicillin in all tested concentrations. It was concluded that *Ho Wood* essential oil showed antimicrobial activity and that in the concentrations evaluated was effective in the inhibitory/bactericidal activity of the bacteria tested in this technique.

Keywords: natural antimicrobials; pathogenic bacteria; minimum inhibitory concentration; minimum bactericidal concentration.

Development Agency: Universidade Tecnológica Federal do Paraná.