Evaluation of different essential oils against *Staphylococcus aureus* strains isolated from bovine mastitis.

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In recent years the use of essential oils and plant extracts has been increasingly reported in pharmaceutical applications and food processing. Essential oils are considered among the most important antimicrobial agents present in plants, besides its antioxidant and anti-inflammatory activity. Within this context, this study aimed to investigate the antimicrobial activity of essential oils from four plants belonging to the Collection of Medicinal and Aromatic Plants of CPQBA - Unicamp, against strains of *Staphylococcus aureus*. The microorganisms included nineteen clinical isolates from bovine mastitis and a standard strain ATCC 6538. The essential oils were obtained from the plant species *Cymbopogon martinii* (Palmarosa), *Cymbopogon winterianus* (Citronella), *Elionorus muticus* (Grass ride) and *Eugenia caryophyllata* (clove), by water-distillation using a Clevenger-type system. The oil concentration was assessed in the range of 1.0 to 0.015 mg/mL and their minimal inhibitory concentrations (MIC) were determined by microdilution method (CLSI, 2005). The results indicated that all essential oils showed antimicrobial activity against *S. aureus*. Among them, *E. muticus* (Grass ride) showed the best activity, with activity ranging from 0.031 mg/mL to 0.5 mg/ml, and were able to inhibit 50% of *S.aureus* strains at 0.250mg/mL, including the ATCC strain. These results reinforce the importance of the compounds isolated from plants and their influence on elimination of pathogenic microorganisms, reaffirming the role of natural products as potentially able to resolve the problem of antimicrobial resistance.