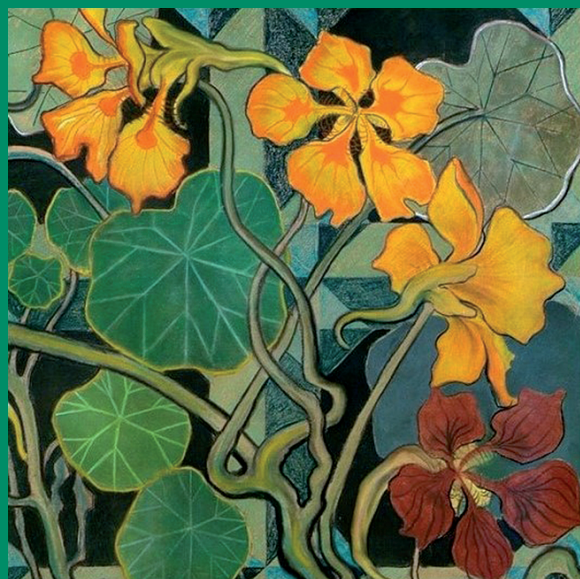


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ABSTRACTS BOOK

S2.P266 Antibacterial activity of essential oils against streptococci and staphylococci causing bovine mastitis

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Bovine mastitis is a major concern for the dairy cattle community worldwide, leading to high economic loss (Gomes et al., 2016). Mastitis, subclinical or clinical, can be caused by contagious or environmental pathogens. Although the use of antibiotics is still the primary approach for treatment, its efficacy is limited. Moreover, the development of antimicrobial resistance (AMR) leads to the need for alternatives to antibiotic therapy (Yang et al., 2019). Due to their antibacterial effects, essential oils (EOs) have gained much attention in this field as candidates to fight against bacterial infections and control further development of AMR (Arbab et al., 2022).

This research aimed at testing the antibacterial activity of eleven EOs and two EO blends against *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Streptococcus uberis*, *Staphylococcus aureus* and *Staphylococcus epidermidis*, by evaluating the minimum inhibitory concentration (MIC) and the minimum bactericidal concentration (MBC), using microbroth dilution assay. The MIC values of the EOs tested ranged between <0.001% and >3.125% v/v. The effect was higher against *Streptococcus spp* than *Staphylococcus spp* bacteria in general. The EOs of *Origanum vulgare*, *Cinnamomum zeylanicum*, *Thymus vulgaris*, and Blend BR were the most effective against *S. agalactiae*, *S. dysgalactiae*, and *S. uberis* showing MIC and MBC values between <0.001% and 0.390% v/v, and <0.001% and 0.780% v/v, respectively. Against *S. aureus* and *S. epidermidis*, the lowest MICs occurred with *Cinnamomum zeylanicum*: 0.098% and 0.195% v/v, respectively.

This study highlights the importance of evaluating EOs as effective antibiotic alternatives and complementary resources for treatment of bacterial infections.

Keywords: Essential oils, bovine mastitis, antimicrobial resistance, streptococci, staphylococci

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