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CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF ESSENTIAL OIL FROM Eugenia dysenterica DC. AGAINST BACTERIA CAUSING BOVINE MASTITIS

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Bovine mastitis poses a health and economic challenge in dairy farming, affecting food security and the income of rural producers. The objective of this work was to investigate the antimicrobial activity of the essential oil from leaves of *Eugenia dysenterica* DC. (Myrtaceae), known as "cagaiteira", a plant native to the Brazilian Cerrado, against bacteria isolated from clinical and subclinical cases of bovine mastitis. For the extraction of essential oil, leaf samples were collected in Rianápolis-GO (Sisgen A1D543E), dried, ground, and subjected to hydrodistillation for 3 hours in a Clevenger apparatus. Gas chromatography coupled with mass spectrometry was used to analyze the compounds of essential oil. The antimicrobial activity was evaluated using the broth microdilution test, following the protocol recommended by the Clinical and Laboratory Standards Institute. The microorganisms were isolated from cattle milk with clinical and subclinical mastitis: *Staphylococcus* spp.; *Streptococcus* spp.; *Escherichia coli*; *Pseudomonas aeruginosa*, and two standard strains from the American Type Culture Collection (*Pseudomonas aeruginosa* - ATCC 27855; *Escherichia coli* - ATCC 25312). The yield of essential oil was 0.4% (w/w). The main constituents of the oil included the sesquiterpene hydrocarbons β-selinene (23.04%) and α-selinene (19.19%), along with the monoterpene hydrocarbons myrcene (18.24%) and β-pinene (10.24%). Using concentrations between 0.5 mg/ml and 388 mg/ml, the minimum inhibitory concentration (MIC) and the minimum bactericidal concentration (MBC) were determined for *Pseudomonas aeruginosa* (MIC: 127 mg/ml; MBC: 388 mg/ml). The results highlight the potential of "cagaiteira" leaves for developing products that can help control bovine mastitis, especially amid increasing bacterial resistance.

Keywords: *Eugenia dysenterica, "cagaita", essential oil, bovine mastitis, bioinputs.*