

TITLE: SENSIBILITY OF FOOD ORIGIN BACTERIA TO ESSENTIAL OILS FROM *Lippia sidoides* AND *Lippia Affinis gracillis* H.B.K.

AUTHORS: RABELO, A.S.¹; PEIXOTO², L.J.S.; SOUSA², M.M.; FERNANDES¹, A.W.C.; RIBEIRO¹, I.D.F.; ROSA¹, D.S.; PEIXOTO², R.M.; VILAR², F.C.R.; COSTA¹, M.M.

INSTITUTION: ¹UNIVERSIDADE FEDERAL DO VALE DO SÃO FRANCISCO (BR 407, KM 12, LOTE 543, PETROLINA – PE, BRAZIL). ²INSTITUTO FEDERAL DE EDUCAÇÃO CIÊNCIA E TECNOLOGIA DO SERTÃO PERNAMBUCANO (PE 647, KM 22, PISNC N-4, ZONA RURAL, PETROLINA – PE, BRAZIL)

ABSTRACT:

Essential oils from aromatic herbs have been studied for many years for food conservation, and their antimicrobial action has caused an increasing interest in the area, aiming at the reduction of synthetic additives. Therefore, this work aimed to evaluate the antimicrobial activity of essential oils from *Lippia sidoides* and *Lippia Affinis gracillis* H.B.K on 15 isolates of *Staphylococcus aureus* and 13 isolates of *Escherichia coli* isolated from goat and sheep meat from public markets in the municipalities of Petrolina/PE and Juazeiro/BA, as well as against two strains of *Listeria monocytogenes* and one strain of *Salmonella* spp., isolated from knives in poultry abattoirs in the state of Paraná. For that purpose, broth microdilution tests were performed in microplates with concentrations of 3200, 1600, 800, 400, 200, 100, 50, and 25 µg/mL. The isolates were cultivated in a BHI medium and subjected to turbidity in a saline solution at 0.5 in the McFarland standards; the absorbance was read in a spectrophotometer. The microplates were incubated at 37 °C for 24 hours for the reading of the minimum inhibitory concentration (MIC); after this period, they were inoculated with the aid of a sterile replicator in plates containing MH agar, with later incubation at 37 °C for 24 hours. The minimum bactericidal concentration (MBC) was determined from the visual reading, considering the lowest concentration of the substance able to kill the bacteria. The oil from *L. sidoides* presented inferior MBC means when compared to the oil from *L. Aff. gracillis*. For the *L. sidoides*, the MBC means obtained were 729 µg/mL, 800 µg/mL, 600 µg/mL and 800 µg/mL, for the isolates of *S. aureus*, *L. monocytogenes*, *E. coli*, and *Salmonella* spp., respectively. Five strains of *E. coli* presented sensibility inferior 25 µg/mL. For the *L. Aff. gracillis*, the MBC means were 800 µg/mL, 1600 µg/mL, 1200 µg/mL, and 400 µg/mL, for the isolates of *S. aureus*, *L. monocytogenes*, *E. coli*, and *Salmonella* spp., respectively. Therefore, the studied oils present antimicrobial action on bacteria from food origin, being a product that can be inserted in the industry in order to improve food microbiological quality.

Keywords: antimicrobial, goat, meat, sheep

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