ANTIMICROBIAL ACTIVITY OF WILD BASIL (Ocimum gratissimum L.) ESSENTIAL OIL IN BACTERIA ISOLATED OF MINAS CHEESE.

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The Ocimum gratissimum L species, popularly known as wild basil, is an aromatic herb consisting of eugenol, a volatile phenolic compound with antimicrobial properties. The aim of this study was to evaluate the antioxidant and antibacterial activities of wild basil essential oil on bacteria as Escherichia coli, Enterococcus sp., Lactococcus sp., Salmonella sp. and Staphylococcus aureus. The content of phenolic compounds was determined by Folin-Ciocalteau colorimetric method and the antioxidant activity was assessed by the ability to capture the free radical DPPH (1,1-diphenyl-2-picrilhidrazina). The concentration of essential oil used was: 100% essential oil, 50% and 25% (v/v ethanol) dilution. The antibacterial activity was determined by disk diffusion method on Mueller-Hinton agar and bacterial suspension at a concentration of $10^8$ and $10^9$ CFU/mL. The plates were incubated at 37°C for 24 hours and the diameters of inhibition zones were interpreted. The content of phenolic compound was found to be 575.5 (mg gallic acid/g essential oil) and the study of antioxidant showed an IC$_{50}$ of 3.95 µg/ml. The results showed that the antimicrobial activity of all samples and bacterial suspension counts are sensitive to essential oil concentrations tested. Inhibition zones observed ranged from 10 to 15 mm for 100% essential oil, 7-13 mm for 50% dilution and 4-9 mm at a dilution of 25%. Therefore, this study showed that the wild basil essential oil had good antioxidant and antimicrobial activity which could be used as a natural antimicrobial agent in cheese.