

EVALUATION OF ANTIMICROBIAL POTENTIAL OF BERGAMOT ESSENTIAL OIL AGAINST TOTAL COLIFORMES IN NON FERMENTED MILK DRINKS CONTAINING *PSYLLIUM*

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**ABSTRACT:** Dairy Derivatives; antimicrobial activity; resistance.

Dairy products are of great importance in the food market, and their consumption has been increasing. Among these products are unfermented dairy drinks, These are passive of tests with essential oils because they do not have fermentation microorganisms which can be affected by the oil. The objective of this study was to test bergamot essential oil in an unfermented dairy beverage, To analyze the antimicrobial activity of the same before the total coliform count in VRB (Violet Red Bile Agar). The milk beverage was produced in the CMTEL belongs to UEM, Being used 50% of serum and 50% of milk, Obtained from the Iguatemi experimental farm; the addition of sugar was in the proportion of 12kg/100L, to hydrolyze lactose, was used 0,04g/L of enzyme lactase (Lactozyn®). The treatments were: T1= 0,02g/l in EO (essential oil) of bergamot, containing *psyllium* 1,0% and T2= 0,04g/l in EO (essential oil) of bergamot, containing *psyllium* 1,0 % T3= 0,06g/l in EO (essential oil) of bergamot, with 1,0% of *psyllium* flour T4= 0,08g/l in EO (essential oil) of bergamot, whit 1,0 % of *psyllium* flour. It was established as a storage period of the beverage 10 days under refrigeration at 4°C, in these periods the seeding was carried out in duplicate VRB plates, and these were incubated at 35 ° C / 24h. It was also evaluated the antimicrobial activity of essential oils (OEs) of *Citrus nobilis* (bergamot) and *Rosmarinus officinalis* (rosemary) against culture of *Escherichia coli* (code) by the disc diffusion method. Were used 3,5,7 e 9% EO and analyzes of pH and acidity of the samples. As a positive control, methanol and negative, pentabiotic. There was a significant difference ( $p < 0,05$ ) between the control treatments (1,88log10) and the treatment containing a higher level of oil inclusion (2,60 log10). In the analysis of sensitivity of E. coli to OEs of bergamot and rosemary there was no formation of halos, evidencing the microbial resistance to the essential oils evaluated, being inefficient. However, The mean diameter of the halos with pentabiotic was 20 and 25mm. The tests showed that the essential oil of bergamot does not possess antimicrobial activity for total coliforms, possibly due to the low concentration used or the inefficiency with respect to the Gram negative bacteria.