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ACEPTABILIDAD SENSORIAL Y ACTIVIDAD ANTIMICROBIANA DE ACEITES ESENCIALES SOBRE BACTERIAS CONTAMINANTES Y PATOGENAS DE PURE DE TOMATE.

SENSORIAL ACCEPTABILITY AND ANTIMICROBIAL ACTIVITY OF ESSENTIAL OILS ON SPOILAGE AND PATHOGENIC BACTERIA FROM TOMATO PURÉE.

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The new trend in food industry, preferred by consumers, is the use of natural preservatives to replace traditional methods. Investigations are being oriented on the application of new methods of making food safe which have a natural or 'green' image. Application of essential oils (EOs) is a very attractive method for controlling postharvest diseases and spoilage in various fruits and vegetables. In a previous work we isolated and identified *Klebsiella ornitholytica* and *Candida tropicalis* from tomatoes surface. In addition we demonstrated that *Escherchia coli* was able to growth in tomato puree during storage at 30°C. So, the aim of this work was to test and compare the antimicrobial activities of four EOs against undesirable bacteria and yeasts isolated tomatoes and obtained from collection cultures. Inhibition of growth by different concentration (50-300 ppm) of EO from lemon(*Citrus limon*), oregano(*Origanum vulgare* L.), onion (*Allium cepa*) or garlic(*Allium sativum*) was tested by the paper disc agar diffusion method. First, the sensory acceptability of the EOs was evaluated in tomato purée (TP) by an untrained panel using a hedonic scale of four points. Lemon essential oil was the most acceptable for all the different concentrations tested except 300 ppm. Contrary, onion essential oil was not acceptable under any condition. Garlic essential oil did not show antibacterial activity, being only active against the *Candida tropicalis*. The growth of all tested microorganisms, *E. coli* ATCC 25922, *Klebsiella ornitholytica*, *Listeria monocytogenes* and *C. tropicalis* were inhibited by lemon and oregano essential oils at 300 ppm, which was considered unacceptable from view point sensorial. In this condition, oregano essential oil was the most effective, producing inhibition zones between 12 and 27 mm. Lemon essential oil was the only one capable of inhibit the growth of *E. coli* ATCC 25922, *K. ornitholytica* and *L. monocytogenes* at lower concentrations (150-200 ppm). At these concentrations the organoleptic contribution of lemon EO to the flavor was satisfactory. In conclusion, lemon, oregano and garlic Eos showed promising results, especially lemon EO for the utilization of as suitable preservative agent for use in minimallyprocessed fruit products.