

Title: EXTRACTION AND EVALUATION OF ANTIMICROBIAL PROPERTIES OF BASIL ESSENTIAL OIL

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Abstract:

The basil (*Ocimum basilicum* L.) belongs to the family *Lamiaceae*, which comprise about 50 to 150 different species. Among the species of *Ocimum* genus, *O. basilicum* is the most widely grown commercially due to its green and aromatic leaves that are used dried or fresh as a condiment or as essential oil source. The basil essential oil was demonstrated to have insecticidal properties, repellents, and antimicrobial, being also used in grains conservation. The antimicrobial activity of basil essential oil is related to its content of methyl chavicol and linalool, the basil oil majority compounds. The objective of this study was to extract the essential oil from *O. basilicum* and evaluate its antimicrobial properties against food spoilage microorganisms. The essential oil was extracted from 1,270 g of basil fresh leaves, collected during the December of 2014 and January of 2015, during morning. The leaves were weighed and submitted to hydro distillation process by Clevenger apparatus during a period of 5 hours. Antimicrobial activity of basil oil was tested against yeasts (*Saccharomyces cerevisiae* ATCC 9763 and *Zygosaccharomyces bailii* BCV 08) and bacteria (*Lactobacillus plantarum* ATCC 8014), both considered as food spoilage. Initially, the method of oil diffusion in sterile paper dishes was applied, and as a second step, the Minimal Inhibitory Concentration (MIC) was determined by microdilution in 96 wells microplate. As result, a yield of basil essential oil about of 0.24% was obtained, and it was according with previous studies. Moreover, in solid medium plates was verified an inhibition zone (about of 2 mm) formation with growth of *S. cerevisiae* ATCC 9763; however a inhibitory effect against the other tested microorganisms was not detected. The basil essential oil concentration of 0.125% was capable of inhibiting the total growth of *S. cerevisiae* yeast, thus this concentration was defined as the MIC for the basil essential oil obtained by this study.

Keywords: *Saccharomyces cerevisiae*; *Ocimum basilicum*; yeasts; spoilage.

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