

## Abstract

Hydro-distilled volatile oils from the leaves of *Ocimum gratissimum* L. (Lamiaceae) of 13 populations of different silvicultural zones were evaluated for antimicrobial activity against Gram positive (*Staphylococcus aureus*, *Bacillus* spp.) and Gram negative (*Escherichia coli*, *Pseudomonas aeruginosa*, *Salmonella typhi*, *Klebsiella pneumoniae*, *Proteus mirabilis*) bacteria and a pathogenic fungus, *Candida albicans*. All the essential oils are active to the tested microbes with different strength. The highest antimicrobial activity against Gram positive bacteria (*Staphylococcus aureus*) and Gram negative bacteria (*Pseudomonas aeruginosa* and *Proteus mirabilis*) was observed from the eastern Kenya (Meru) oil. Meru oil was the best and its effectiveness was consistent on nearly all the microbes tested. The oil from the plant growing in the coastal region of Kenya (Mombasa) showed the best effect only on Gram negative bacteria (*Escherichia coli* and *Proteus mirabilis*). Both oils (Meru and Mombasa) were dominated by monoterpenes accounting for 92.48 % and 81.37 % respectively. The monoterpene fraction was characterized by a high percentage of eugenol (68.8 %) for Meru oil and 74.10 % for Mombasa oil. The other major monoterpene was methyl eugenol (13.21 %). Camphor (0.95 %) was observed only in the Meru oil. (*Cis*)-Ocimene, (*trans*)-ocimene and  $\beta$ -pinene were present in both Meru and Mombasa oils. The sesquiterpenes present in fairly good amounts in both oils were germacrene D and (*trans*)-caryophyllene. The minor sesquiterpenes were  $\alpha$ -farnesene (0.85 %) and  $\beta$ -bisabolene (0.74 %) which were present in the Meru oil only.