

Assessment of Antimicrobial Efficacy of Essential oil of *Cymbopogon flexuosus* Staph.

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ABSTRACT

Plants produce a high diversity of secondary metabolites with a prominent function of protecting plants against predators and microbial pathogens due to their biocidal properties against microbes or repellence to herbivores. Essential oils, also known as volatile oils, are complex mixtures of volatile constituents' biosynthesized by plants. Essential oils have been used medicinally in history. Essential oils have been traditionally used for treatment of infections and diseases all over the world for centuries. There has been an increasing interest in essential oils during recent years because of the need of new therapies against microbes. *Cymbopogon flexuosus* Staph, commonly called as East Indian Lemongrass, is a perennial grass native to India, Sri Lanka, Burma, and Thailand. Lemongrass essential oil is extracted through the process of steam distillation of dried lemongrass. The main constituents of its essential oil are Myrcene, Citronellal, Geranyl Acetate, Nerol, Geraniol, Neral, Limonene and Citral. Lemongrass has antimicrobial properties which makes it an inhibitor of microbial and bacterial growth in the body, both internally and externally. It is also known to be effective in inhibiting bacterial infections in the colon, stomach, urinary tracts, wounds, respiratory system, and other organ systems, while also helping to cure diseases resulting from bacterial or microbial infections such as typhoid, food poisoning, skin diseases, body odor, and malaria (caused due to protozoon). In the present study the volatile oil of *Cymbopogon flexuosus* Staph. was analysed for its antimicrobial properties viz., antibacterial, antifungal and anticandidal activity. Preliminary screening was done using agar disc diffusion method and the minimum inhibitory concentration of the oil was tested using microbroth dilution assay. From this study, it is concluded that the Indian Essential oil Lemongrass, which is native to Tamil Nadu possess antimicrobial activity. Combinations of essential oils have demonstrated promising beneficial effects and represent another alternative to antibiotic treatment that merits further investigation.