



Study of phytochemistry and antimicrobial activity of leaf extract of *Cymbopogon citratus*

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Abstract : The leaf extracts of *Cymbopogon citratus* were subjected to phytochemical and antimicrobial analysis. Chloroform extract showed the best results. Presence of tannin, flavonoid, phenol, carbohydrate and volatile oil were observed in the chloroform extract which showed the maximum activity against the pathogenic bacterial strains *Escherichia coli*, *Staphylococcus aureus*, *Salmonella typhi* and fungal strain *Candida albicans* with 7mm, 1mm, 3mm and 4mm of inhibition zone respectively compared to hexane and methanolic extract which showed the least activity. The dilution susceptibility test method was used to determine the Minimum Inhibition Concentration (MIC) of the chloroform extract. MIC value was determined as 22.5mg/ml. The present data provides the basis that leaf extract of *Cymbopogon citratus* can also be used for therapeutic purposes against common pathogenic microbes.

Key Words : Antimicrobial activity, *Cymbopogon citratus*, MIC, zone of inhibition.

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Introduction :

Cymbopogon citratus (Lemongrass) belongs to the section of *Andropogon* called *Cymbopogon* of the family Gramineae. *Cymbopogon* is a genus of about 55 species, which are endogenous in tropical and semitropical areas of Asia and are cultivated in South and Central America, Africa and other tropical countries. These are tufted perennial C4 grasses with numerous stiff stems arising from a short, rhizomatous root stock (Kumar *et al.*, 2000). Leaves are very large and long, numerous erect lower ones sometimes reduced to their sheaths. Spikelet are very small, arranged in couples, one stalked, containing one male flower, and the other sessile with one hermaphrodite and often one barren flower, (Burger *et al.*, 1986).

Literature suggest the presence of Alkaloids, tannins, sugars, flavonoids, phenols in the leaf extracts of *Cymbopogon citratus* (Nehra *et al.*, 2013). It has also been suggested that the antimicrobial activity is mainly due to the presence of alkaloids and other polyphenolic compounds or due to free hydroxyl groups (Simon *et al.*, 1984).

Infectious diseases are the world's leading cause of premature deaths, killing almost, 50,000