

## EVALUATION OF ANTIMICROBIAL POTENTIAL AND PHYTOCHEMICAL SCREENING OF *CITRUS LEMON*

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### ABSTRACT

With increasing rate of microbial resistance to synthetic antimicrobial agents/drugs, efforts are being made to explore natural plants for effective antimicrobial activity. Hence, the antimicrobial properties and the phytochemical composition of *citrus lemon* were evaluated in this study. The antimicrobial activity of cold distilled water, ethanol and methanol extracts of *citrus lemon* peels and seed were tested against some bacteria and fungi pathogens; *Staphylococcus aureus*, *Streptococcus pyogens*, *Bacillus subtilis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumonia*, *Penicillium notatum*, *Aspergillus niger* and *Fuserium oxysporum*. Methanol extract of lemon seed generally exhibited maximum zone of inhibition with the highest (22.0mg/ml) against *Staphylococcus aureus* compared to lemon peel with maximum zone of inhibition (15.3mg/ml). Meanwhile, there was no zone of inhibition of any of the extracts against all the test fungi isolates. Both ethanol and methanol seed and extract had minimum inhibitory concentration range of 3.125mg/ml – 50.0mg/ml against all test bacteria isolates. Methanol peel and seed extract had a minimum bacteriocidal concentration range of 6.25mg/ml – 12.5mg/ml and 3.13mg/ml – 12.5mg/ml respectively for all bacteria isolates. The phytochemical screening of *citrus lemon* revealed a qualitative composition of saponins, tannin, flavonoid, glycoside and steroid in both lemon peel and seed. The result findings therefore revealed *citrus lemon* to have a better antibacterial potential than antifungal potential with the seed extract having a more efficient effect compared to the peel.

**Keywords:** Antimicrobial, extract, phytochemical, methanol, *Staphylococcus*.