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Phytochemical, antimicrobial and anti-diabetic properties of *Artemisia annua* L. (sage wort) and *Plectranthus neochilus* Schltr. (blue coleus)

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Statement of problem: The rising of incidence in multidrug resistance amongst pathogenic microbes is no longer matched by the expansion in the arsenal of agents available to treat infections. Ethno-botanical records suggest that plants are sleeping giant of pharmaceutical industry. Thus, they may provide natural source of antimicrobial drugs that will serve as novel or lead compounds that may be employed in controlling some infections globally. The purpose of this study is to evaluate the phytochemical, antimicrobial and anti-diabetic properties of *Artemisia annua* and *Plectranthus neochilus*.

Methodology & Theoretical Orientation: Phytochemical analysis of the aqueous and hexane extracts of the plant species were conducted using standard methods. The antimicrobial activity of the crude extracts and gentamicin (control) against pathogenic microorganisms namely; *Escherichia coli*, *Klebsiella Pneumonia*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Salmonella typhi* and *Candida albicans* was determined by using agar well diffusion method. The Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) of the plants against the microorganisms were also determined. The anti-diabetic effects of the plant species were investigated by oral administration of 100 mg/ml of alloxan monohydrate to produce diabetic condition in normal albino rats, before being treated with the extracts. The phytochemical screening of the extracts indicated the presence of tannins, steroids, saponins, cardiac glycosides, carbohydrates, free reducing sugar, alkaloids and flavonoids. The largest zone of inhibition (26 mm) was obtained from *A. annua* hexane extract against *C. albicans* and the smallest zone of inhibition (5 mm) was obtained from *P. neochilus* hexane extract against *P. aeruginosa*. The MIC of the aqueous and hexane extracts of the plants against the test organisms ranged from 0.6 mg/ml to 37.5 mg/ml, while the MBC ranged from 2.4 mg/ml to 18.8 mg/ml. The leaf extracts of the two plants had lowering effects on the blood glucose levels of the alloxan-induced diabetic rats.

Conclusion & Significance: The results of this study support the medicinal use of the leaf extracts of *A. annua* and *P. neochilus* as antimicrobial and antidiabetic agents; hence they can serve as important therapeutic aids for alleviating ailments of human kind

Biography

Janet U Itelima has her expertise in Applied Microbiology and passion in research related to Applied Microbiology, Biotechnology, and Plant Science, Lecturing, and Community Services. She has obtained her PhD and currently is an Associate Professor of Applied Microbiology. She is an Academic Staff of the Department of Plant Science and Technology, Faculty of Natural Sciences, University of Jos. She has published so many papers both nationally and internationally. She has also written two books. She is deeply involved in motivating students on how to obtain academic excellence. She has attended workshops and conferences both nationally and internationally where she presented papers, chaired sessions and served in advisory committee

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