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Efficient Management of Plant Waste Products in Controlling Clinically Important Multidrug Resistant Bacteria

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Keywords Well Diffusion Method; Wood Scrap; Fruit Peels; Seed Husk; Zone of Inhibition.

ABSTRACT: Antibiotic resistance has become a major clinical and public health problem within the lifetime of most people living today. We are currently facing multidrug-resistant infectious disease organisms that are difficult and, sometimes, impossible to treat successfully. Current problem of antibiotic resistance, has limited the use of old generation antibiotics and has necessitated the need for a continued search for new and better antimicrobial compounds from natural resources. Our present research work is aimed to evaluate the possibility of plant waste products like Neem (Azadiracta indica) wood scrap, orange (Citrus limetta) fruit peels and Rice (Oryza sativa) seed husk to overcome the antibiotic resistance in few clinically isolated bacterial strains i.e E.coli, S.aureus, P.vulgaris and K.pneumoniae. Antimicrobial activities of methanol extracts of neem wood scrap, orange fruit peels & rice husk at varying concentrations of 100mg/ml, 50mg/ml, 25mg/ml were prepared and used screened for its antibacterial properties according to Kirby-Bauer well diffusion method with small modification. Ciprofloxacin is taken as standard in comparing with results obtained. Methanol extract of Neem wood scrap shows maximum zone of inhibition at low conc. 25mg/ml with zone of inhibition of 16,15 and 14mm against S.aureus at the time intervals of 18 hours. The Methanol extract of orange peels shows 15,13 and 10mm against P.vulgaris. Rice husk shows 9-11mm against K.pneumoniae. In all the extracts studied methanol extract of neem wood scrap shows maximum inhibition against P.vulgaris, S.aureua, K.pneumoniae and E.coli. and it is found that orange fruit peels and rice husk were found to be ineffective in controlling all the bacteria studied. From our studies, it is concluded that the use of methanol extract of neem wood scrap can be of great significance in controlling few clinically important multidrug resistant bacteria. © 2016 iGlobal Research and Publishing Foundation. All rights reserved.

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