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Antimicrobial activities of natural honey, *Caesalpinia pulcherrima* and *Acalypha wilkesiana* against some pathogens

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Honey is a supersaturated sugar solution with a high osmolarity that retards microbial growth. In this study, the antimicrobial activity of natural honey was evaluated with four pathogenic microorganisms consisting of *Escherichia coli, Staphylococcus aureus, Proteus vulgaris and Streptococcus faecalis* using agar diffusion method. Undiluted honey was generally effective giving a bactericidal inhibition zone of 11.7 mm, 11.5 mm and 10 mm for *Escherichia coli, Staphylococcus aureus and Streptococcus faecalis* compared with the chloramphenicol antibiotics which serve as standard control having 10 mm, 18 mm and 10 mm respectively. This is highly commendable because of other nutrient benefits of honey. Similarly, honey with diluents of ethanol at concentration of 5% and 6% were effective with zone of inhibition as high as 30 mm for *Escherichia coli* compared with the chloramphenicol antibiotics which serve as standard control having 10 mm zone of inhibition. Dry leaves extract of plant sources such as Pride of Barbados (*Caesalpinia pulcherrima*) and Red Acalypha (*Acalypha wilkesiana*) were also tested as therapeutic agents *in vitro*. The samples were extracted by using solvents like methanol and ethyl acetate. *Caesalpinia pulcherrima* exert zone of inhibition of 14 mm, 20 mm, 16 mm and 14 mm against *Escherichia coli, Staphylococcus aureus, Proteus vulgaris* and Streptococcus faecalis compared with the control values stated above. *Acalypha wilkesiana* (Red Acalypha) extract also show zone of inhibition of 12.5 mm, 18.5 mm, 15.6 mm and 17.8 mm against above test organism respectively under same condition. This study shows that honey and the extracts of this plant sources possess potent antibacterial activity against tested pathogenic organisms in our quest for valuable discovery of potent drugs from natural sources.

Biography

Adedayo Olajide Ajayi has obtained his PhD in Microbiology from the University of Ibadan, Ibadan, Nigeria. He had diversified working and research experience in the field of Environmental Microbiology and Antimicrobials. He published over 50 research articles in learned journals worldwide. His research activity progresses with surveillance of antibiotic resistant reservoirs during Post-doctoral Fellowship Program in the Department of Biochemistry and Microbiology, University of Fort Hare, South Africa, sponsored by Govan Mbeki Research and Development Center of the institution. He is currently acting as the Head of Department of Microbiology, Adekunle Ajasin University, Akungba-Akoko, Nigeria.

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