

Comparative *In-Vitro* Antimicrobial Activities of Selected Medicinal Plant Seeds used in Control of Diabetes Mellitus

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The management of Diabetes mellitus is a major challenge for clinicians in and around the world. Uncontrollable hyperglycemia increases the risk of numerous complications in the body systems. Although a number of anti-diabetic drugs are available for therapeutic intervention, herbal management for diabetes is encouraged due to its low side effects and effectiveness worldwide. The present study deals with the evaluation of antibacterial activity of selected medicinal plant seeds namely *Syzygium cumini* (L.) Skeels, *Brassica alba* L., *Trigonella foenum-graecum* L. and *Nigella sativa* L. Crude ethanolic seeds extract was investigated for their antibacterial activity against *Enterococcus faecalis* (ATCC 29212-gram positive), *Staphylococcus aureus* (ATCC 29213-gram positive), and *Escherichia coli* (ATCC 25922- gram negative) by agar well diffusion method in triplicates. The *S. cumini* seed extract exhibited maximum zone of inhibitions (24.70, 16.14 and 10.37 mm) against all three bacterial species (*E. faecalis* 29212, *S. aureus* 29213 and *E. coli* 25922) respectively. However, the antibacterial potential of *B. alba* seed extract represented minimum zone of inhibitions (1.08, 1.08, 0 mm) against all three bacteria; *E. faecalis* 29212, *S. aureus* 29213 and *E. coli* 25922 respectively. Moderate antibacterial activity was revealed by *T. foenum-graecum* (10.83, 11.70 mm) against *E. faecalis* 29212 and *E. coli* 25922 and by *N. sativa* (15.70 mm) against *E. coli* 25922. There were no inhibition zones against *S. aureus* 29213 by *T. foenum-graecum* and *E. faecalis* 29212 by *N. sativa*. Results indicated that a significant amount of inhibition zone was achieved against all the selected bacterial species, which was comparable with positive control streptomycin. According to these results, *S. cumini* seed extract showed highest antimicrobial activity against selected bacteria species. In conclusion, the present study shows that *S. cumini* seeds can be used not only to treat diabetes mellitus but also as an antimicrobial agent.

Keywords: Antimicrobial activity, Diabetes mellitus, Medicinal plants, Seeds, *Syzygium cumini*