ABSTRACT

In the present investigation, Grasses *Diplachne fusca* (L.) P.Beauve and *Sporobolus coromandelianus* (Retz). Kunth were used for the green synthesis of AgNPs. The characterization of the biosynthesized nanoparticles was done using UV-Vis, FTIR, XRD and SEM, to reveal the morphological characteristics such as shape and size. Biosynthesized silver nanoparticles showed UV-Vis absorption peaks at 450 and 440 nm respectively. The SEM image showed the shape of AgNPs as spherical and globular. The XRD analysis of AgNPs determines the crystalline particle size as 3.93nm and 7.85nm while hegaxonal and tetragonal in their crystalline nature. The antibacterial properties of AgNPs have been evaluated against the oral bacteria such as *Escherichia coli, Staphylococcus aureus, Bacillus subtilis* and *Klebsiella pneumoniae*. Both AgNPs of grasses showed antibacterial activity against gram-positive and gram-negative oral pathogenic bacteria. The maximum zone of inhibition at 15mm was revealed by AgNPs of *D. fusca* against *K. pneumoniae* while the AgNPs of *S. coromandelianus* exhibited a maximum zone of inhibition at 12mm against *E. coli*. After the comparison of both grasses, the AgNPs of *D. fusca* were found to greatly enhance the antibacterial activity of herbal mouthwash in comparison to the AgNPs of *S. coromandelianus against K. pneumoniae.*