GREEN SYNTHESIS OF SILVER NANOPARTICLE AND ITS APPLICATION

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Eichhornia crassips is a water hyacinth. It is one of the world's most obnoxious water weeds when not controlled. Eichohornia crassips capacity for the growth and propagation causes major conservation problem. Most of the problems associated withEichhornia crassips are due to its rapid growth rate. Water hyacinth is very efficient in taking up Calcium, Copper, Sulfer, Ferric, Magnesium, Manganese, Aluminium, Boron, Zinc, Molybdenum, Nitrogen,Potassium, and Phosphorus favouring its growth over other aquatic species. To overcome this problem, plant can be exploited to inhibit the unwanted bacteria. Phytochemical screening carried out with fresh water hyacinth has revealed the presence of many metabolites which in turn contributes to its antibacterial activity. The present study portrays that the phytochemicals in fresh water hyacinth mat contribute in many significant ways for various studies in a truthful manner to the pharmaceutical activity of the plant. Biostabilized silver nanoparticles were synthesized using petiole extract of the weed, water hyacinth. The silver nanoparticles were characterized using UV-vis spectrophotometry FTIR analysis. The synthesized of nanoparticles were cube shaped, stable and demonstrated potent antomicrobial activity against selected gram negative bacteria. The typical morphology, surface properties and bacterial activity of the nanopartical demonstrate its potential application in pharmaceutical, medicine and catalysis. Thus the present method developed is a rapid, ecofriendly and economical method for synthesis of biostabilized silver nanoparticles which can be exploited to inhibit the pathogens.

Keywords - Eichhornia crassips, water hyacinth, Antibacterial activity, silver nanoparticles