

ABSTRACT

The present work is an effort to discover ethnopharmacological effects, such as anti-microbial, MIC, antioxidant assay, viz; total antioxidant, total phenolic contents, ferric reducing antioxidant power (FRAP) and DPPH analysis. The crude extracts of bark and leaves of plants *Casearia tomentosa* Roxb. and *Spermadictyon suaveolens* Roxb. were obtained in polar and nonpolar solvents viz; petroleum ether, chloroform, methanol and distilled water. The physical and chemical properties of plant extracts were determined like colour, texture, chemical nature and percentage yield. The *C. tomentosa* leaf extract in chloroform revealed maximum yield among all extracts, i.e. 2.3% with dark green color while *S. suaveolens* bark extract in water exposed maximum yield, i.e. 2.3%. The pathogenic bacterial and fungal strains used were including two gram positive bacteria (*Staphylococcus aureus* and *Bacillus subtilis*), three gram negative bacteria (*Escherichia coli*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*) and three fungal strains (*Aspergillus niger*, *Aspergillus oryzae* and *Fusarium solani*). The highest zone of inhibition was shown by leaf extract in methanol of *C. tomentosa* against *E. coli*, 37 ± 3.03 mm. The maximum inhibition against *F. solani* was shown by petroleum ether extract of leaf of *C. tomentosa*, i.e. 34 ± 4.59 mm. Maximum zone of inhibition of *S. suaveolens* was leaf methanolic extract against *S. aureus*, i.e. 32 ± 9.60 mm whereas petroleum ether extract of leaf displayed maximum zone against *F. solani*, 29 ± 0.72 mm. Minimum inhibitory concentration of Leaf and bark of *C. tomentosa* showed 0.8g/mL concentration against *P. aeruginosa* i.e. 0.181 ± 0.12 and 0.022 ± 0.02 while leaf of *S. suaveolens* 0.7g/mL concentration against *P. aeruginosa* and *K. pneumoniae* i.e. 0.118 ± 0.041 and 0.122 ± 0.032 . Bark of *C. tomentosa* showed MIC at 0.1 g/mL concentration i.e. 0.035 ± 0.011 against *A. oryzae* while *S. suaveolens* Leaf showed 0.2g/mL concentration i.e. 0.048 ± 0.011 .

The antioxidant potential of all plants extracts recorded by four assays which were compared with the standard/synthetic antioxidants. Maximum percentage scavenging by DPPH assay was shown by leaf methanol extract of *C. tomentosa* 75.35% while that bark methanol extract of *S. suaveolens* showed 78.317% at 500 μ g/mL. IC_{50} values of petroleum ether and aqueous extracts of leaf of *C. tomentosa* was 20.119 μ g/mL and 21.935 μ g/mL while methanolic extract of bark of *S. suaveolens* 25.81 μ g/mL. Highest antioxidant activity was displayed by methanol extract of bark of *C. tomentosa* and *S. suaveolens*, i.e. 1.131 ± 0.10 and 0.896 ± 0.13 . Highest FRAP and TPC values were showed by chloroform extract of bark of *C. tomentosa*, i.e. 296TE μ g/mL and 86.16GAE μ g/mL. Leaf chloroform extract of *S. suaveolens* showed maximum FRAP value, i.e. 211 μ g/mL.