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**Antimicrobial activity of selected medicinal plants from natural ecosystem.**

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**Abstract**

Medicinal plants are commonly found in natural ecosystems and plant extracts have been rigorously used for their bioactive compounds to cure diseases without any side effects. Antidiabetic plants were selected from natural ecosystem to this study since diabetes is a most serious metabolic disorder in the world. Ethanobotanical studies are also important to know the traditional uses for treating diabetes. Thus this study was aimed to investigate antimicrobial activity and ethanobotany of selected plants from natural ecosystem. Leaves, bark, root and stem of *Syzygium cumini* were collected from littoral forest and leaves of *Gymnema sylvestre, Lumnitzera racemosa, Acanthus ilicifolius, Avicennia marina* and *Excoecaria agallocha* were obtained from mangrove ecosystem in Jaffna. Collected plant materials were dried in the oven at 60°C for 48 hours. The dried plant powder dissolved in sterile distilled water (1mg/ml) was tested against *E.coli* and *Aspergillus niger* separately by using agar plate assay. 1mg/ml dried plant powder was incorporated with nutrient agar and potato dextrose agar separately to inoculate 1 ml *E.coli* (102 cells/ml) and 0.5 cm *Aspergillus niger* disc respectively. Another set were kept without adding leaf powder as controls. All bacterial plates were kept at 37°C for 24 hours and fungal plates were allowed at room temperature (34°C) for incubation. Percentage of inhibition was calculated using number of colonies in *E.Coli* and diameter of fungal disc in *Aspergillus niger*. All these plants tested for antibacterial and antifungal activities showed more than 66.0 % of inhibition against harmful pathogens. There was significant different (p=0.05) observed in the % of inhibition of antifungal activity of leaf and bark of *Syzygium cumini, leaves of Gymnema sylvestre* and  *Acanthus ilicifolius* and % of inhibition of antibacterial activity for leaf and bark of *Syzygium cumini*, leaves of *Lumnitzera racemosa* and *Excoecaria agallocha*. Antibacterial and antifungal activities of dried leaf powder were high in *Syzygium cumini* and these values were 83.3 ± 0.5 % and 86.0 ± 0.8 % respectively. Antibacterial activity of selected medicinal plant against *E.coli* was in the range of 66.7 ± 1.2 % to 83.3 ± 0.5 %. Antibacterial and antifungal activities were low in *Excoecaria agallocha and Gymnema sylvestre* respectively. Ethanobotanical studies revealed that *Syzygium cumini* and G*ymnema sylvestre* had high traditional medicinal value to treat diabetes and these plants were highly utilized by local people in Jaffna.

***Key words****: Ethanobotany, antidiabetic plants, antimicrobial activity*