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IN-VITRO ANTIMICROBIAL ACTIVITY OF GLIRICIDIA SEPIUM LEAF EXTRACTS

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ABSTRACT

Gliricidia sepium is a multipurpose leguminous plant of the family *Fabacea* (*Leguminosae*). The aqueous leaf extract of *Gliricidia sepium* is traditionally used as fly repellent and ectoparasiticide by the farmers. There is meager information on the antimicrobial properties of this plant. This paper describes the *in vitro* antimicrobial potential of methanol, ethanol, and ethyl acetate extracts of *Gliricidia sepium* leaf against a broad range of microbes involving 29 bacteria (Gram positive-7, Gram negative-22) and 16 fungi isolated from animals, birds, soil, feces, foods, and vegetables. The results showed that leaf extracts of *Gliricidia sepium* was effective against all (7/7) Gram positive bacteria and 95% (21/22) Gram negative bacteria, as compared to chloramphenicol (positive control), which was effective against all (29/29) the pathogens. The rate of efficacy against fungi was 62.5% (10/16), as compared to 37.5% (6/16) in case of Amphotericin-B (positive control). The zone of inhibition (ZOI) of *Gliricidia sepium* leaf extracts against Gram positive bacteria (mm/20 μ l), Gram negative bacteria (mm/20 μ l), and fungi (mm/50 μ l) were 6.20 \pm 0.71, 6.24 \pm 0.41, and 3.22 \pm 0.87 respectively. It was the highest in ethanol solvent for Gram positive bacteria (7.85 \pm 0.59), Gram negative bacteria (7.00 \pm 0.68), and fungi (5.93 \pm 1.19). The ethanol extract was highly effective (ZOI= 10 mm) against *Bacillus megeterium*, *Staphylococcus aureus* ATCC 6538, *Escherichia coli*, *Pastuerella multocida*, and *Pseudomonas* sp. of bacteria, and *Blastomyces dermatitidis*, *Candida albicans*, *Cryptococcus neoformans*, *Geotrichum candidum*, and *Mucor* sp. of fungus. The minimum inhibition concentration (MIC) was 2.27 \pm 0.10 mg/ml against bacteria and 3.75 \pm 0.25 mg/ml against fungi. The MIC was the lowest in ethanol solvent both for bacteria (2.0) as well as fungi (3.0). It is concluded that ethanol extract of *Gliricidia sepium* leaves was highly effective against bacteria and fungi, and could be incorporated in drug formulations as a broad spectrum herbal antibiotic.

KEY WORDS

Bacteria, Fungi, Herbal antibiotic, *Gliricidia sepium* leaf

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