

**Short Communication**

**Study of anti-bacterial and anti-fungal activity of *Melia dubia* Leaves**

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**A**ntimicrobial and antifungal properties of water and alcoholic extracts of leaves of *Melia dubia* bark were tested in gram positive and gram negative bacterial strains using agar gel diffusion method. It was observed that alcoholic extract was most effective as it showed bacterial activity in the gram negative and gram positive strains and against fungi also. All the test compound exhibited moderately to good anti bacterial and antifungal activity.

The plant *Melia dubia* commonly known as Hill Neem, Malai Vembu, Munnattikaraka etc. is used as anthelmintic, gastrointestinal tract and also in colic disorders, etc. Limited work is available on the chemical constituents present in various parts of this plant (Fulzula

were shade dried, powdered and packed in Soxhlet apparatus. Extraction was done by continuous hot percolation method using different solvents for 72 hrs each. Firstly dried leaves were treated with Petroleum ether for defatting and then with the ethanol and distilled water for ethanolic extract and aqueous extract. The percentage yields of ethanol and water extracts were found to be 6.6 % w/w and 5.4 % w/w respectively.

The anti bacterial and antifungal activity of extracts was tested by agar gel diffusion method (Selvamani and Latha, 2004) (Zhu *et al*, 2005).

The microbes used to determine antimicrobial activity are *Escherichia coli* (ATCC 25922),

Table 1 : Study of anti bacterial and antifungal activity of *Melia dubia* Leaves.

Test Organisms	Zone of inhibition in mm			
	Ethanol extract	Water extract	Ciprox	Nystatin
	5mg/ml	5mg/ml	100 µg/ml	100 µg/ml
<i>Escherichia coli</i> (ATCC 25922)	10±3	8±2	12±3	--
<i>Staphylococcus aureus</i> (ATCC 25973)	9±2	7±2	11±2	--
<i>Pseudomonas aureginosa</i> (ATCC 27853)	10±2	8±2	12±3	--
<i>Candida albicans</i> (ATCC10231)	10±3	6±1	--	11±3
<i>Aspergillus niger</i> (ATCC 16404)	9±2	8±2	--	10±3

Values are expressed in mean ± SEM, (n=3)

*et al.*, 2002). The traditional medical practitioners in Nilgiri District uses the paste of the leaves and bark for healing wounds and for skin diseases. In this direction, our efforts were directed to study the antibacterial and antifungal activity of leaves of *Melia dubia*. Prompted by these findings, extensive phytochemical, biological and pharmacological investigations on different part of this plant have been taken up (Purushothaman *et al.*, 1984).

**MATERIALS AND METHODS**

Fresh leaves of the plant were collected and authenticated by the Botanist, KNK College of Horticulture, Mandasaur. The collected leaves and bark

*Staphylococcus aureus* (ATCC 25973), *Pseudomonas aureginosa* (ATCC 27853), and for antifungal activity the following microbes were used *Candida albicans* (ATCC10231) and *Aspergillus niger* (ATCC 16404).

After determining the MIC, 5 mg/ml of ethanol and water extracts of leaves were chosen. Ciprofloxacin 100 µg/ml was used as the standard for antibacterial activity and Nystatin 100 µg/ml was used as the standard for antifungal activity.

**RESULTS AND DISCUSSIONS**

All the test compounds exhibited moderately to good anti microbial and antifungal activity Table-1 Comparatively ethanolic extract was found to be more

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