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Short Communication:

Antibacterial and antifungal activities of *Solanum xanthocarpum* Leaf

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Antimicrobial and antifungal properties of water and alcoholic extracts of leaves of *Solanum xanthocarpum* Leaf 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 garm negative and gram positive strains and against fungi also. All the test compound exhibited moderately to good anti bacterial and antifungal activity.

Key words : *Solanum xanthocarpum.*

The plant *Solanum xanthocarpum* Leaf commonly known as Kantkari, Nidigdhika, Bhuiringani, Ringni[1]. etc. is used as anti-asthamatic, anti-cough, also used in suppression and retention of urine[2] etc. Plant contain carpestrol, glucoalkaloid, solanocarpine, solanines, flavanol glycoside[3], apigenine, sitosterol, solanocarpine[1]. Prompted by these findings, extensive phytochemical, biological and pharmacological investigations on different part of this plant have been taken .

Fresh leaves of the plant were collected and authenticated by the Botanist, KNK College of Horticulture, Mandsaur. The collected leaves were shade dried. Shade dried crude powder (100gm) of leaves of *Solanum xanthocarpum* was extracted in soxhlet apparatus[4] Sequentional extraction was done with petroleum ether (60-80 ºC), chloroform, methanol, distilled water for about 24 hrs. with each solvent[5]. The extract were evaporated to dryness under vacuum using a rotary evaporator below 40 ºC and stored at 5 ºC. The residue obtained was used for determination of anti-bacterial and anti-fungal activity after making the different concentration in dimethyl sulfoxide (DMSO,w/v). 100µl of each extracted sample at different concentrations (50-100 µg/ 100µl) was used for the estimation of antimicrobial activities by agar well plate assay method[6].

The bacterial cultures used in this study were The microbes used to determine antimicrobial activity are *Escherichia coli* (ATCC 25922), *Staphylococcos 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 petroleum ether, chloroform, methanol and water extracts of leaves were chosen[7]. 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[8].

All the test compounds exhibited moderately to good anti microbial and antifungal activity Table-1 Comparatively Methanolic extract was found to be more effective against all the microbes than water extract. The Methanolic extract of the plant has very good antibacterial and antifungal activities.

Table 1 : study of anti bacterial and antifungal activity of *Solanum xanthocarpum* Leaves.

Test Organisms	Zone of inhibition in mm					
	Petroleum ether extract	Chloroform extract 5mg/ml	Methanol extract 5mg/ml	Water extract 5mg/ml	Ciprofloxacin 100 ug/ml	Nystatin 100 ug/ml
Escherichia coli (ATCC 25922)	6±1	9±3	10±3	8±2	14±3	--
Staphylococcos aureus (ATCC 25973)	5±3	7±2	9±2	7±2	13±2	--
Pseudomonas aeruginosa (ATCC 27853)	8±2	8±2	10±2	8±2	14±3	--
Candida albicans (ATCC10231)	7±2	9±3	10±3	6±1	--	13±3
Aspergillus niger (ATCC 16404)	8±2	8±2	9±2	8±2	--	12±3

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

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