

**AN EXPERIMENTAL VIEW ON ANTIMICROBIAL COMMOTION OF SHEFALI
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ABSTRACT

Drug protection from human pathogenic microorganisms has been normally detailed from everywhere the world as of late. Accordingly there emerges a need to foster elective antimicrobial medications for the treatment of irresistible sicknesses. Points: To assess the antimicrobial capability of *Vitex negundo* Linn. (Nirgundi) leaf in vitro on both gram positive and gram negative organic entity. Material and Methods: Antimicrobial movement of ethanol concentrate of *Vitex negundo* Linn. leaves was done by receiving great dissemination strategy upon unadulterated culture of *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC-25923) and *Klebsiella pneumoniae* (ATCC-27736) microorganisms obtained from the American Type Culture Collection (ATCC). In the current investigation the grouping of 20 mg/ml, 40 mg/ml, 60 mg/ml, 80 mg/ml, 100 mg/ml of leaf extricate was utilized. Results: The outcome showed the antimicrobial exercises against all the above bacterial microbes examined. The greatest zone of hindrance noticed for *S. aureus* was 15 mm at the grouping of 80 mg/ml and 100 mg/ml and for *E. coli* and *K. pneumoniae* greatest ZOI noted was 12 mm and 11 mm at 100 mg/ml focus individually. End: The outcomes proposed that the leaf concentrate of *Vitex negundo* Linn. undoubtedly had significance, can't antimicrobial action against every one of the microbes tried however the impact was more prominent towards *S. aureus*.

KEYWORDS: Antimicrobial Property, Shefali, Patra, Well Diffusion Method.**INTRODUCTION**

Organisms for example infections, microscopic organisms, parasites are present wherever among which some are beneficial for our wellbeing and on the other hand some are destructive. Irresistible infections cause 26% of yearly passing's around the world, almost 30% of 1.49 billion inability changed life years (DALYs) are lost each year to illnesses of irresistible^[1] beginning. Generally individuals of non-industrial nations face the difficulties by the horribleness and mortality related with irresistible illnesses among them especially babies and kids are more influenced out of which 3,000,000 kids kick the bucket every year from^[2] intestinal sickness and diarrheal infections alone. Anti-infection agents are the medication that hinders the development or then again annihilates the microorganisms. Since the microorganisms have the hereditary capacity to communicate and gain^[3] protection from drugs utilized as helpful specialists, for which there is a need to foster another medication which fills the need Many references identifying with microorganisms in antiquated writing. Around 100 sorts of microorganism have been perceived and depicted in Vedic writing. A few organic entities are

apparent and perceptible (Drishya) and some are of infinitesimal (Adrishya). They might begin either inside or outside of body. They have identified for essential seat of contamination (Vesa) and optional seat of disease (Parivesha) in the body. The living beings ought to be annihilated to moderate the evil impacts brought about by them. Mantra (hymns), Bali (sacrifice), Homa (votive custom), Manidharana (wearing diamonds), openness to sunrays, are, Guggulu and so on natural medications were utilized to annihilate^[4] these microorganisms. Sushruta and Vagbhata had perceived the quantity of sicknesses as Sankramaka or irresistible. They have too demonstrated the relationship of microorganisms with whatever infections. For that so many antimicrobial drugs have been referenced in Ayurveda text since^[5,6] ages on the name of Krumighna or Rakshoghna. *Vitex negundo* is an enormous bushes or little trees up to 4.5 m high, having a place with verbenaceae family and found all through India. It have numerous remedial activities viz, Anti-inflammatory, antibacterial, moderate CNS depressant, antifertility, antispasmodic, pain relieving, hepato-defensive, estrogenic, anticonvulsant, antiarthritic, diuretic, antimicrobial, hostile to

parkinsonian, antipsychotic, energizer, antihistamine delivering action, mosquito repellent action, against feedant, juvenomimetic, hostile to androgenic. The leaves are fragrant, tonic, vermifuge and valuable in stiffness, joint pain, catarrhal fever, cephalgia,^[7] hyperextends, orchitis, syphilis, inflammations and ulcers. Obstruction created by pathogenic microorganisms against anti-microbials alongside their incidental effects are possibly poisonous for have. These reasons having given ascend to a dire need of growing new antimicrobial medications which have less unfriendly impact as contrast with manufactured medication, henceforth the current examination was under taken to assess antimicrobial action of leaves of Nirgundi.

MATERIAL AND METHODS

Leaves were oppressed for washing under the tap water to eliminate discolor soil, soil and so forth for 2-3 times furthermore, finally followed by ethanol wash and afterward permitted to conceal dry at room temperature for seven days. At long last leaves of three plants were powdered independently to make a coarse powder with blender processor. That powder was stuffed in locked polythene sacks, marked and put away noticeable all around close compartment for study. Readiness of concentrates: 20 gm *Vitex negundo* Linn. leaves powdered material was extricated in 200 ml ethanol by soxhlet mechanical assembly at 40-50 C. Separated extricate was kept at room temperature for disposal of ethanol, 2.29 gm remove was gathered. What's more, it was weakened in 10 ml ethanol. This concentrate was put away in a cooler for additional utilization and called as the mother arrangement from which distinctive centralization of concentrate as 20 mg/ml, 40 mg/ml, 60 mg/ml, 80 mg/ml, and 100 mg/ml was ready.

Microorganisms: The unadulterated culture of *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC-25923), *Klebsiella pneumoniae* (ATCC-27736) microbes were secured from the American Type Culture Collection (ATCC). Readiness of subculture media for Inoculum: A loopful of creature was moved from research centre kept up with culture (agar incline) into the test tubes containing sanitized supplement stock medium. The tubes were brooded for 18-24 hours at 37 C. Planning of Assay Medium and Pour plates: The sterile Mueller Hinton Agar (MHA) was administered to recently cleaned Petri dishes and permitted them to cool at 40 C, till the medium became cement. The Petri dishes give an enormous surface region for development and development. The combination of microorganisms (arranged subculture media) was yard over the outside of strong MHA medium with sterile swab steak. The six well (opening) of 8 mm breadth were exhausted. Leaves concentrate of preliminary medication at various groupings of 20 mg/mL, 40 mg/mL, 60 mg/mL, 80 mg/mL, 100 mg/mL was poured in each well and standard arrangements (close to 100% ethanol) poured in one well with sterile pipette. The volume of all test arrangement and standard arrangements was 50 µl. The

Petri dishes were kept in hatchery for 18 to 24 hr at 37°C. All the^[8] methodology were completed in an aseptic region.

RESULT

Antibacterial movement of ethanolic concentrate of *Vitex negundo* in the current examination showed Zone of restraint (ZOI) beginning from the convergence of 20mg/ml for every one of the three chose microscopic organisms. The antibacterial movement against gram negative microscopic organisms *E. coli* was found at the all fixation and the most noteworthy ZOI was 12 mm at the convergence of 100 mg/ml. The most elevated zone of restraint of 15 mm was recorded against *S. aureus* at the convergence of 80 mg/ml and 100 mg/ml. Against *Klebsiella pneumoniae* the most elevated ZOI was 11 mm at the convergence of 100mg/ml.

DISCUSSION

The plant separate was tried against gram positive (*S. aureus*) and gram negative microscopic organisms (*E. coli*, *K. pneumoniae*). 98% ethanol was utilized as a control drug. It showed least hindrance, might be a direct result of vanishing of control drug as a result of little amount (50 µl) and high focus. The preliminary medication showed less action against gram negative as contrast with gram positive microorganisms. By and large gram negative microbes are^[9] safe than gram positive microorganisms. Most noteworthy zone of restraint was recorded against *S. aureus*, the antibacterial movement of the plant is surprising thinking about the significance of this living being. A few variables are known to influence the dynamic rule present in the plant. Extremity of the extricating dissolvable extraordinarily influence the antimicrobial property. The action of plant removes against both gram positive and gram negative microbes might be an demonstrative of the presence of expansive range anti-infection compounds or basically broad metabolic poisons in the^[10,11] plant. In a past report, the antimicrobial action and phytochemicals of the leaves and bark of *Vitex negundo* L. was thought about in contrast to three gram-positive microbes viz. *Staphylococcus epidermidis*, *Bacillus subtilis*, *S. aureus* furthermore, negative gram-negative microscopic organisms viz. *E. coli*, *Salmonella typhimurium*, *Pseudomonas aeruginosa*, *Vibrio cholerae* furthermore, *Vibrio alginolyteus*. Both polar and non-polar concentrates viz. oil ether, chloroform, ethanol, methanol and fluid concentrates were ready and read for antibacterial action utilizing circle dispersion, agar cup and stock weakening strategies. Results showed promising antibacterial action of the relative multitude of concentrates of both leaf and bark against *E. coli*, trailed by *S. aureus*. Ethanol and methanol concentrates of the leaf showed hindrance movement against both gram-positive and gram-negative microscopic organisms while petrol ether and chloroform concentrates of bark would be advised to antibacterial^[12] movement against gram-positive microorganisms. Discoveries of the current investigation and past works ensnare the sign of the

preliminary medication as a strong remedial specialist for antibacterial property.

CONCLUSION

The aftereffect of the current investigation showed the presence of wide range of antibacterial exercises against all the above bacterial microbes considered. In this manner it tends to be utilized as antibacterial enhancement and for the improvement of new restorative specialist.

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