



## EVALUATION OF ANTIBACTERIAL ACTIVITY OF FLOWER EXTRACTS OF SOME PLANTS.

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### Abstract:

The aim of the study was to evaluate the antibacterial exercises of a quarter century separates against five microorganisms strains. The tried plant extricates demonstrated variety in zone of restraint. The most noteworthy antibacterial possibilities were seen from the concentrates of *Acacia catechu* which indicated most elevated zone of hindrance in all microorganisms taken after by *Terminalia bellerica*, *Boswellia serrata*, *Aloe vera* and *Mimosa pudica*. The antibacterial movement seen in plants are demonstrative of the methanol plant concentrates of these plants could be a conceivable source to acquire new and successful home grown medications to treat contaminations, subsequently defended the ethic utilization of species against different infectious diseases.

**Keywords:** Evaluation, antibacterial activity, zone of inhibition, plant extracts.

### INTRODUCTION

The most of the world's population relies on traditional medicines for primary health care, the majority of which include the utilization of plant. In India, just about 95% of the meds are plant situated in the customary frameworks of solution. Around 80% of therapeutic medications are of plant birthplace. The plant mixes mirror the plants in general as a security and adequacy much better than that of its disengaged and immaculate dynamic mixes.

In late time, the examination for potential antibacterial operators has been moved to plants. Most plants are restoratively helpful in treating infections in the human. It is proposed that around 10% of blooming plants on earth have at one time been utilized by nearby groups all through world yet just 1% have perceived by present day science. Thus there is have to assessed the plants for the utilization of solution. The conventional therapeutic techniques, uniquely the utilization of restorative plants still assume a key part to change over essential wellbeing needs in the creating nations.

Plant items have been a piece of meds since time immemorial. There are around 120 plant based medications endorsed worldwide and they originate from 95 plant species. Roughly, 2.5 lakh types of blooming plants and just 5000 have had their pharmaceutical potential evaluated. A few reviews have distinguished mixes in the plants that are successful anti-infection agents. The need of hunt is to screen various plants for promising possibilities of organic action. The assessment of plant constituents for antimicrobial exercises has demonstrated that higher plant speak to a potential wellspring of better anti-toxin properties. Since old time the plant and their fixings have been known for their valuable level of antimicrobial exercises.

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The plant compound demonstrated photochemical, antibacterial, antifungal, and so on exercises. The anti-toxin resistance has been turned into a worldwide significance. Henceforth, there is have to utilize plant based antibacterial. There are many distributed reports on the viability of customary herbs against Gram-positive and Gram-negative microorganisms and therefore plants are as yet perceived as the bedrock for current solution. In the present review a quarter century nearby plant species each having a place with various families was assessed for their antibacterial possibilities.

## MATERIALS AND METHODS

### Collection of plant materials:

The new plant material was assembled and washed under running fixture wate, air dried and a short time later homogenized for fine powder and set away in water/air evidence containers. The plants materials were related to the help standard composed work.

### Preparation of extraction:

The leaves were washed all things considered 2-3 times with running nozzle water. By then air dried under shade and took after entire shade drying. The plant material was walloped in blender; the powder was kept in insignificant plastic packs with paper naming. The leaves of 5gm weighed and were beat in 25 ml of dissolvable and continued with starrier for overnight and it was secluded through Whatman No.1 channel paper. By then the filtrate was secured at 4°C.

### Microorganisms:

The bacterial strains considered were Gram-positive (*Bacillus subtilis*, *Staphylococcus aureus*) and Gram-negative (*Pseudomonas aeruginosa*, *Proteus vulgaris* and *Salmonella typhi*) bacterium (Table 1).

### Antibacterial Assay:

The antibacterial action test was performed for fluid concentration and agar well diffusing strategy for dissolvable concentrates. The liquid Muller Hinton Agar (HiMedia) was immunized with the 100 µl of inoculums and filled the cleaned Petri plate. For agar circle dispersal framework, the circle (0.7 cm) was immersed with 100 µl of the test compound, permitted to dry and was presented on the upper layer of the seeded agar plate. The plates were obsessed about night at 37°C. Microbial change was coordinated by measuring the partition across over of zone of hindrance. For each bacterial strain control was kept up in flawless dissolvable were utilized rather than think. The outcome was seen by measuring of zone of hindrance in broadness. The test was rehashed three times and means qualities are spoken to (Table 2). They got results were separated and the standard counter agents poisons *penicillium* (100 µg/plate) and Gentamicin (10 µg/circle).

## RESULTS AND DISCUSSION

The results of screening plant isolates against antibacterial activities are displayed in Table 2. The methanol concentrates of a quarter century having a place with fifteen families were attempted against two Gram-positive and three Gram-negative minute living beings using agar well scattering. The plants showed antibacterial development to a particular degree.

Acacia catechu showed 25mm and 24 mm zone of limitation in *Staphylococcus aureus* and *Bacillus subtilis* strains and 25 mm, 21 mm and 13 mm in *Proteus vulgaris*, *Salmonella typhi* and *Pseudomonas aeruginosa* strains of minuscule living beings independently. *Terminalia bellerica* uncovered 21mm and 16 mm zone of deterrent in *Staphylococcus aureus* and *Bacillus subtilis* strains and 19 mm, 20 mm and 10 mm zone of limitation in *Proteus vulgaris*, *Pseudomonas aeruginosa* and *Salmonella typhi* strains of infinitesimal life forms independently. *Boswellia serrata* revealed 19 mm and 10 mm zone of restriction to *Bacillus subtilis* and *Staphylococcus aureus* independently, while13

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mm, 19 mm and 15 mm zone of impediment in *Proteus vulgaris*, *Salmonella typhi* and *Pseudomonas aeruginosa* strains of minuscule life forms exclusively.

*Bacillus subtilis* was the most vulnerable microbes among all the bacterial strains explored in the present work. The consequences of the present review bolster the folkloric use of the considered plants and propose that a portion of the plant extricates have mixes with antibacterial properties that can be utilized as antimicrobial operators in new medications for the treatment. The most dynamic concentrates can be subjected to confinement of the remedial antimicrobials and experience promotes pharmacological assessment.

The antibacterial substances in the higher plants are entrenched. The fruitful assessment of plant substances from plant material is to a great extent subject to the kind of dissolvable utilized as a part of the extraction system. Laborers normally performed water separates, water as the dissolvable be that as it may, plant extricates in natural dissolvable (methanol) gave more reliable antimicrobial movement contrasted with those removed in water. The mixes being separated notwithstanding their inborn bioactivity, by their capacity to break up or diffuse in the distinctive media utilized as a part of the improvement of solution, a characteristic plan for the advancement of medication.

Regarded laborers have distinguished plant intensifies that are successful anti-infection agents. Customary frameworks around the globe which use natural cures are an essential hotspot for the disclosure of new anti-infection agents. Some customary cures have as of now delivered aggravates that are compelling against anti-toxin safe strains of microorganisms. The anti-microbial property of the home grown exacerbates that shows the requirement for further research into conventional mending framework. It is likewise vital pharmacological concentrated prompting blend of more intense medication with diminished danger.

The present researched some plant separates did not demonstrate any antibacterial action but rather, negative outcomes don't mean nonappearance of bioactive constituents nor is that the plant inert. Dynamic compound(s) might be available in deficient amounts in the unrefined concentrates to show movement with the measurement levels utilized. Absence of action jars in this manner just be demonstrated by utilizing vast measurements. Then again, if the dynamic guideline is available in sufficiently high amounts, there could be different constituents applying hostile impacts or nullifying the beneficial outcomes of the bioactive specialists. With no antibacterial movement, concentrates might be dynamic against other bacterial species or infections which were not tried.

It is likewise demonstrated that Gram-positive microscopic organisms are more powerless when contrasted with Gram-negative microbes. These distinctions might be credited to truth that the cell divider in Gram-positive microbes is of single layer, though; the Gram-negative microscopic organisms cell divider is multi-layered structure. The section of the dynamic compound through the Gram-negative cell divider might be restrained. It is however that watched contrasts may come about because of the measurement level in the review. Moreover, microorganisms demonstrate variable affectability to compound substances identified with various resistance levels between strains. There are contrasts in the antimicrobial impacts of plant gatherings, because of photochemical properties and contrasts among species.

The present review was started in light of expanding resistance of anti-microbials including microscopic organisms. Plant separates (mixes) are most vital in the field of germ-free and antimicrobial specialists. Along these lines, the microbial activity of a quarter century plants was screened against standard pathogens. The methanol plant concentrates of *Acacia catechu*, *Terminalia bellerica*, *Boswellia serrata*, *Aloe vera* and *Mimosa pudica* exhibited the most astonishing development. These plants can be moreover subjected to partition of the remedial antimicrobial and do encourage pharmacological evaluation.

**Table 1: Showing used bacteria for antibiotic screening.**

| Sr. no. | Bacteria used                 | Grown on media | Gram stain |
|---------|-------------------------------|----------------|------------|
| 1       | <i>Bacillus subtilis</i>      | Nutrient agar  | G+ve       |
| 2       | <i>Proteus vulgaris</i>       | Nutrient agar  | G-ve       |
| 3       | <i>Pseudomonas aeruginosa</i> | Nutrient agar  | G-ve       |
| 4       | <i>Salmonella typhi</i>       | Nutrient agar  | G-ve       |
| 5       | <i>Staphylococcus aureus</i>  | Nutrient agar  | G+ve       |

**Table 2: Showing antibiotic activities of methanol plant extracts**

| Sr. no. | Plant species                    | Zone of inhibition(in mm diameter) |                       |                            |                    |                   |
|---------|----------------------------------|------------------------------------|-----------------------|----------------------------|--------------------|-------------------|
|         |                                  | Penicillium (Gram-positive)        |                       | Gentamycin (Gram-negative) |                    |                   |
|         |                                  | <i>Bacillus subtilis</i>           | <i>Staphylococcus</i> | <i>Proteus vulgaris</i>    | <i>Pseudomonas</i> | <i>Salmonella</i> |
| 1       | <i>Abruspre catorius L</i>       | 8                                  | 11                    | 15                         | -                  | 15                |
| 2       | <i>Acacia catechu L.</i>         | 24                                 | 25                    | 25                         | 13                 | 21                |
| 3       | <i>Acacia nilotica L</i>         | 9                                  | 10                    | 8                          | 15                 | -                 |
| 4       | <i>Adathoda vasicaL.</i>         | -                                  | 7                     | 10                         | 15                 | 11                |
| 5       | <i>Aloe vera</i>                 | 11                                 | 17                    | 13                         | 15                 | 16                |
| 6       | <i>Annona squamosa L.</i>        | 9                                  | 9                     | 11                         | 13                 | 10                |
| 7       | <i>Asparagus racemosus</i>       | 12                                 | 9                     | 10                         | -                  | -                 |
| 8       | <i>Barleria prinitis L</i>       | 8                                  | 9                     | 8                          | 15                 | 10                |
| 9       | <i>Boswellia serrata L.</i>      | 19                                 | 10                    | 13                         | 19                 | 15                |
| 10      | <i>Bougainvillea spectabilis</i> | 9                                  | 8                     | -                          | -                  | -                 |
| 11      | <i>Curcuma longa L</i>           | -                                  | 12                    | -                          | 10                 | 8                 |
| 12      | <i>Butea monosperma</i>          | 8                                  | 12                    | 19                         | 9                  | 10                |
| 13      | <i>Clitoria ternatea L</i>       | 15                                 | 13                    | -                          | -                  | 9                 |
| 14      | <i>Ficus racemosa L.</i>         | 9                                  | 8                     | 13                         | 15                 | -                 |
| 15      | <i>Gymnema sylvestre R.Br</i>    | -                                  | 12                    | 12                         | 10                 | 12                |
| 16      | <i>Mimosa pudica L.</i>          | 14                                 | 12                    | 11                         | 15                 | 12                |
| 17      | <i>Mirabilis jalapa L</i>        | 10                                 | 12                    | 14                         | -                  | -                 |
| 18      | <i>Murraya koenigii L.</i>       | 8                                  | 17                    | 15                         | 10                 | 6                 |
| 19      | <i>Plumbago zeylanica L.</i>     | -                                  | 11                    | -                          | -                  | 12                |
| 20      | <i>Santalum album L.</i>         | 9                                  | 8                     | 11                         | 13                 | 9                 |
| 21      | <i>Saraca indica L.</i>          | 1                                  | 11                    | 10                         | 15                 | 13                |
| 22      | <i>Terminalia arjuna L.</i>      | 10                                 | 10                    | -                          | -                  | 9                 |
| 23      | <i>Terminalia bellerica L.</i>   | 16                                 | 21                    | 19                         | 20                 | 10                |
| 24      | <i>Vitis vinifera L</i>          | 11                                 | 11                    | -                          | 15                 | 6                 |
| 25      | <i>Withania somnifera L.</i>     | 18                                 | 19                    | -                          | -                  | 21                |

+ indicates presence and — indicates absence of activity.

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