

**STUDENT STUDY PROJECT (2019-2020)**

**Name of the Topic:**

**ANTIMICROBIAL ACTIVITY OF NEEM**

**Under the Guidance of**

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# NEEM

## Classification

Botanical name: *Azadirachta indica*

Family: *Maliaceae*

The study of crude drugs of plant animal or mineral origin is called pharmacognosy and the study of the action of drugs is called pharmacology.

The curative properties of drugs are due to the presence of complex chemical substances of varied composition in one or more parts of these plants such as alkaloids, glycosides, essential oils, etc.

## NEEM OR MARGOSA:

### INTRODUCTION

*Azadirachta indica* is distributed throughout India. Our ancestors worshiped the tree as an invaluable gift of mankind. Every part of the tree is useful to man (may be this reason accounted for the presence of Neem tree in every olden home) in the olden days for this reason there were neem trees in every house. It was generally called as the "Herbal Indian Doctor"

The leaves are reported to be employed in bronchial catarrh, dysentery and diarrhoea. The leaf juice possesses antiseptic, insecticide and parasitic properties. It is used to check hemorrhage from cuts, bruises and wounds. *A. indica* contains proteins carbohydrates, fiber, CaO, K<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, MgO, b-sitosterol and tannins.

### USES

Every part of the tree, leaf, flower, fruit seed, wood & roots has been in use especially in the Ayurvedic and unani system of medicine.

1. Decotion of leaves is an effective antidote for round worms. Leaves have medicinal properties like blood purifier carminative and anti-diabetic, they also have Antiseptic and Anti fungal properties.
2. Recent studies in USA have shown that neem leaf extracts can inhibits certain enzymes in the hepatitis-B virus and herpes virus. Germany and U.K are on their way to extract, which inhibits the division of AIDS infected cells.
3. The latest reports clearly demonstrate that neem is a powerful immune system, booster specifically enhancing the "killer T" that are the bodies first defense against infection.
4. Seed contain 40-90% oil. Neem oil is used in making soaps, toothpastes, herbal shampoos and anti-like shampoos for dogs. It is found helpful in some chronic skin diseases and ulcers. It also cures piles. It has some external application for

rheumatism. Leprosy and sprains neem oil is also reported to have Anti-fertility properties.

5. Flowers are useful in some cases of dyspepsia and general weakness. Flowers along with leaves are used for dressing wounds.
6. The bark of the stem and root contain compounds like nimbin and nimbidin. The bark is used in dental diseases like bleeding gums and phrrhoea, jaundice, various skin diseases like eczema etc, and as an anti allergic agent bark has also anti fungal protozoan property.
7. Neem seeds powder and leaves provides an excellent bulk to the cattle and animal nutrients processed neem. It is also used for the poultry feed.
8. Derivatives of neem have been reported to acts as insecticide, fungicide and nematicide.
9. Neem is a potential source of organic manure, which is rich in plant nutrients like nitrogen, phosphorous and potassium and anti-microbial. Neem seed powder is used as an organic fertilizer.
10. As the wood of neem is resistant to pests, it is having some timber values.

### **Anti bacterial activity of various parts of neem**

#### **Materials and methods:**

##### **Collection of medicinal plant:**

The medicinal plant *Azadirachta indica* was selected and collected their parts like bark and leaves.

The collected parts of medicinal plants were brought into the laboratory to determine antibacterial activity.

##### **Preparation of Extracts**

The collected parts (bark and leaf) of medicinal plant were cleaned and dried under shade. The dried plant materials were then ground well to fine powder. Powdered plant materials were successively extracted with alcohol and acetone. The alcohol and acetone extracts, were then filtered and kept in over at 40 C for 24 hours to evaporate the alcohol and acetone from it. Dark brown and greenish black residues were obtained which are used to determine antibacterial activities.

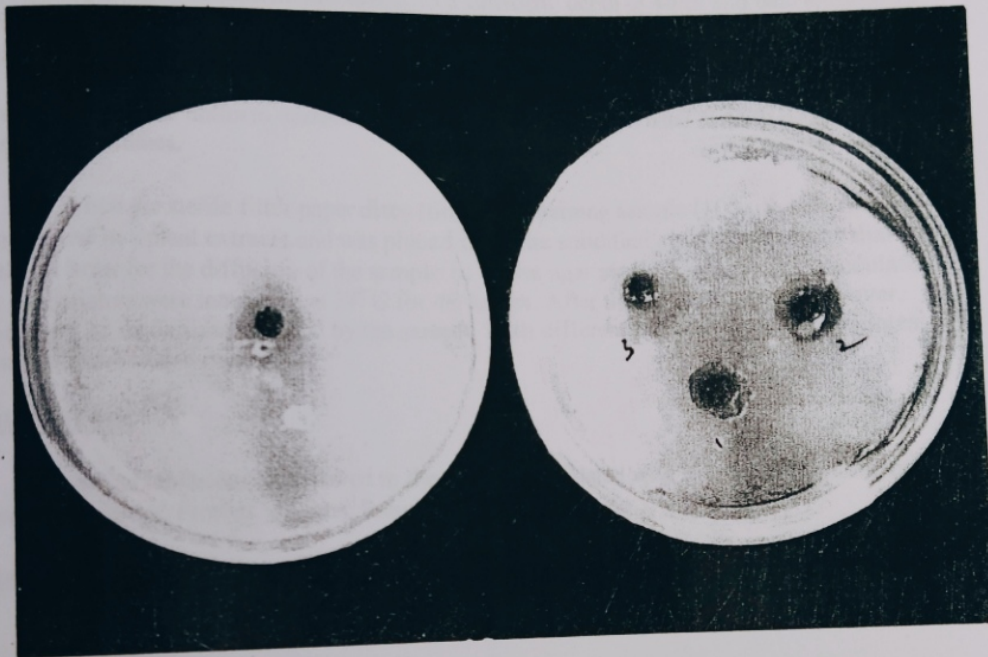
#### **SELECTION OF MICRO ORGANISMS:**

*Enterobacter aerugenosa*

*Bacillus cerens*

*Protease vulgaris*

*Pseudomonas aerugenosa*



ANTIMICROBIAL ACTIVITY OF NEEM EXTRACTS ON MICRO ORGANISMS