

A Article Review On “Pharmacognostical and Pharmacological Review On Polyherbal Plants ”

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ABSTRACT

Herbal plants are used as a source of drug in prehistoric time. The extensive use of herbal remedies and healthcare preparations are mentioned in the Vedas, Kuran, and Bible. Medicinal plants are used for several years to flavor and safeguard food, to treat health disorders and to stop diseases including epidemics. The information about their healing properties has been communicated over the centuries. Active compounds fashioned during secondary metabolism are usually liable for the biological properties of plant species used throughout the domain for various purposes, including the treatment of infectious diseases.

This review include 3 selected herbal plants which is *Azadirachta indica*, *Mimosa pudica*, and *Lantana camara*. The plants contains various active compounds such as alkaloids, triterpenes, glycosides, flavonoids, steroids, bufadienolides, lipids, and organic acids. The pharmacological studies are reviewed and discussed, focusing on that different extracts from this plant have anti-inflammatory, antiallergic, antianaphylactic, antileishmanial, antitumor, antiulcerous, antibacterial, gastroprotective, immunosuppressive, insecticidal, muscle relaxant, sedative, central nervous system depressant, and analgesic. The current review is created with an intended to focus on the numerous ethnobotanical and traditional use as well as the phytochemical and pharmacological study of *Azadirachta indica*, *Mimosa pudica*, and *Lantana camara*.

KEYWORDS :- *Azadirachta indica*, *Mimosa pudica*, *Lantana camara*, Herbal plants, Pharmacological.

Introduction:-

Medicinal plants have been known for times and are extremely Respected worldwide as a rich home of helpful agents for the Inhibition of diseases and illnesses ^[1]. The neem tree (*Azadirachta indica*) has been perceived as having incredible health promoting properties for centuries. neem was at that point being utilized to support healing.^[2] In Ayurvedic literature neem is well known for its medicinal properties viz., Neem bark is cool, bitter, astringent and acrid. In addition to this, it is used to cure tiredness, cough, fever, loss of appetite, worm infestation etc. It also heals wounds and vitiated conditions of kapha, vomiting, skin diseases, excessive thirst and diabetes. . It's fruits are bitter, purgative, antihemorrhoids and anthelmintic. More than 150 compounds have been isolated from different parts of neem.^[3]

The *Mimosa pudica*, invites attention of the researchers worldwide for its pharmacological activities such as anti diabetic, antitoxin, antihepatotoxin, antioxidant and wound healing activities. It is reported to contain alkaloid, glycoside, flavonoid and tannis. It is used in suppresses kapha and pitta heals wounds, coagulates blood and sexual weakness.^[4] All parts of the tree are considered to possess medicinal properties and used in the treatment of biliousness, leprosy, dysentery, vaginal and uterine complaints, inflammations, burning sensation, fatigue, asthma, leucoderma, blood diseases.^[5] *Lantana camara* Linn. is considered as notorious weed and ornamental plant. It is noted that from ancient time that plant have been excellent medicinal use. Since very long time this plant has been reported as one of the most important medicinal plant in the world. It is used in traditional medicinal system for the treatment of ulcer, fever, itches, cut, swellings. Various literature has reported the phytoconstituents present in all parts of *lantana camara*.^[6]

The present review is an aim to give a complete report of the phytochemistry and pharmacological activity.

Plant profile :-**1.NEEM**

Fig.1

Taxonomical classification :

| | |
|-----------------------|---------------------------|
| Common name | Neem |
| Botanical name | <i>Azadirachta indica</i> |
| Family | Meliaceae |
| Kingdom | Plantae |
| Division | Magnoliophyta |
| Class | Magnoliopsida |
| Order | Sapindales |
| Genus | <i>Azadirachta</i> |
| Species | <i>A.indica</i> |

Table 1

Chemical components ^[7]:



PHARMACOLOGICAL ACTIVITIES :-

- 1. Antioxidant activity :** It is the therapeutic plants have been accounted for to have antioxidant activity^[8]. Plants natural products, seeds, oil, leaves, bark, and roots demonstrate an essential job in illnesses aversion because of the rich source of antioxidant^[9]. The examination was performed dependent on leaves, fruits, flowers, and stem bark extracts from the neem tree which show that have strong antioxidant potential activity.^[10]
- 2. Anti-inflammatory effect :** Plants or their isolated derivatives are in the practice to treat/act as antiinflammatory agents^[11]. neem leaf extricates demonstrated significant anti-inflammatory impact^[12]. that nimbidin stifles the elements of macrophages and neutrophils pertinent to inflammation^[13].
- 3. Antibacterial activity :** Methanolic extract of *A. indica* (neem) leaves was tested for its antibacterial, antisecretory and antihemorrhagic activity. methanol extract was the most effective, chloroform moderately effective and hexane extract showed low antibacterial activity^[14]. The photoconstituents like alkaloids, spooning, steroids, tennis, crude glycosides and flavonoids of neem plants was tested for antibacterial activity against pathogenic strains.^[15]
- 4. Antifungal activity :** The ethanolic extract showed more conspicuous activity as compared to aqueous extract^[16]. The seed and leaf extracts of *Azadirachta indica* (neem) were screened for antifungal activity against dermatophytes^[17].
- 5. Wound healing activity :** Different plants/their constituents accept a basic occupation in the damage recovering effect. An examination was made to evaluate the damage patching activity of the concentrates of leaves of *A. indica* and *T. cordifolia* using extraction and cut injury models in Sprague Dawley rodents and results revealed that concentrate of the two plants basically propelled the damage mending activity in both extraction and entry point damage models^[18].
- 6. Immunostimulant activity :** Various studies have revealed that the aqueous extract of leaf and bark possesses anticomplement and immunostimulant activity. Neem oil has been shown to possess activity by selectively activating the cell-mediated immune mechanisms to elicit an enhanced response to subsequent mitogenic or antigenic challenges^[19]
- 7. Anticancer activity:** Neem contains flavanoids and different other ingredients that play an essential job in

restraint of malignant growth advancement. Extensive number of epidemiological examinations suggests that high flavonoid admission might be related with a diminished danger of malignancy^[20]

2. MIMOSA PUDICA :



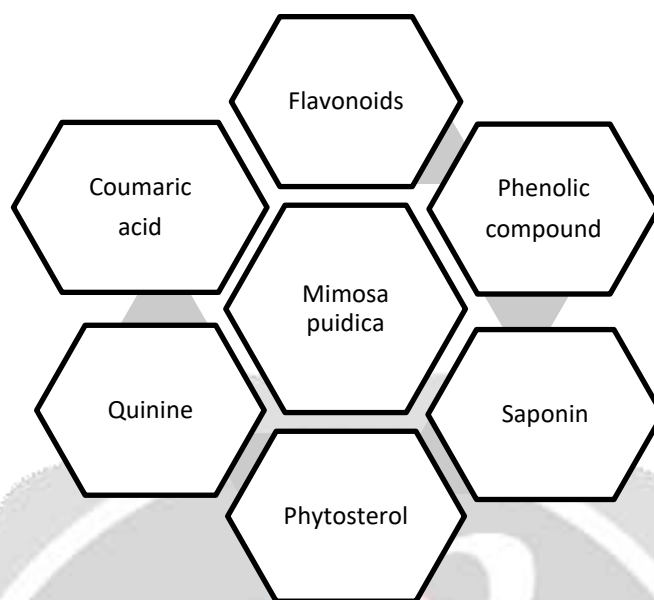
Fig,2



Taxonomical classification :

| | |
|-----------------------|----------------------|
| Common name | Touch me not |
| Botanical name | <i>Mimosa pudica</i> |
| Family | Fabaceae |
| Kingdom | Plantae |
| Division | Magnoliophyta |
| Class | Magnoliopsida |
| Order | Fabales |
| Genus | <i>Mimosa</i> |
| Species | <i>Pudica</i> |

Table 2

Chemical components^[21]:**PHARMACOLOGICAL ACTIVITIES :**

- 1. Antiulcer activity :** The extracts used for the activity were, 90% ethanol, methanol, chloroform and diethyl ether extract. The activity was investigated in albino rats. The models used were aspirin induced model, alcohol induced model and pylorus ligation induced ulcer and the parameters evaluated were ulcer protection, gastric ulcer protection and reduction in total volume of gastric juice, free and total acidity of gastric secretion, gastric ulcer respectively^[22].
- 2. Wound healing activity :** The *M. pudica* shoot methanolic extract, *M. pudica* root methanolic extract showed very good wound healing activity^[23]. The methanolic extract exhibited good wound healing activity probably due to presence of phenols constituents^[24].
- 3. Antimicrobial activity :** Terpenoids, flavanoids glycosides, alkaloids, quinine, phenol, tannins, saponins and coumarin were the active substances found in the extract which may be responsible for this activity^[25].
- 4. Antihyperglycemic activity :** Chloroform extract of *M. pudica* leaves has been screened for its hypolipidemic activity. the biologically active phytoconstituents such as flavonoids, glycosides alkaloids present in the chloroform extract of *M. pudica*, may be responsible for the significant hypolipidemic activity^[26].
- 5. Antidiarrheal activity:** Ethanolic extract of leaves of *M. pudica* has significant anti diarrheal activity. Tannins and Flavanoids were the bioactive constituents which were responsible for the activity^[27].
- 6. Anti-helminthic activity:** Helminths have been a foremost degenerative disease disturbing large percentage of the world and pose an enormous threat to public health in the developing countries which contribute to various ailments such as malnutrition, anaemia, eosinophilia and pneumonia. The parasite of helminths mainly subsists in the human body in the intestinal tract. Resistance in helminths against conventional anthelmintics is a leading problem in the treatment of the diseases. *M. pudica* has been reported to have anti-helminths activity^[28,29].
- 7. Antifertility activity :** *M. pudica* has been used in India for treatment of a different kind of ailment but is commonly used as an antifertility agent^[30]. This study suggested that the root of *M. pudica* may possess antifertility effects as it disturbs the secretion of gonadotropin hormone and it prolongs the oestrous cycle in albino mice^[31].

1. LANTANA CAMARA :



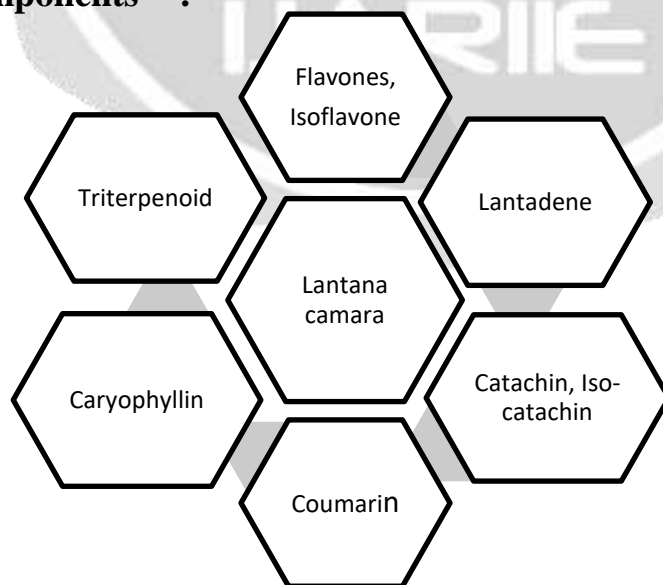
Fig 3



Taxonomical classification:

| | |
|-----------------------|-----------------------|
| Common name | Red sage |
| Botanical name | <i>Lantana camara</i> |
| Family | <i>Verbenaceae</i> |
| Kingdom | Plantae |
| Class | Mangiliopsida |
| Order | Lamiales |
| Phylum | Mangoliophyta |
| Species | <i>L.camara</i> |

Chemical components^[32]:



PHARMACOLOGICAL ACTIVITIES:

- 1. Antifungal activity :** *L.camara* as a medicinal plant, possesses vital antifungal potential. Its antifungal potential was screened against *Alternaria* sp. a pathogenic fungus causing diseases, especially in vegetables. The food poison plate technique was used to perform the antifungal activity with three different concentrations of extract^[33].
- 2. Antibacterial activity:** *L.camara* possesses antibacterial potential as a different part i.e., leaves and flowers have shown strong antibacterial activity. It was reported that leaf and flower tissue samples of *L.camara* in three different kinds of the solvent extract showed noteworthy activity against different bacteria i.e., *P. aeruginosa*, *Bacillus subtilis*, and *E. coli* ; however low antibacterial activity was reported against *S. aureus*^[34].
- 3. Wound healing activity :** *Lantana camara* is used in herbal medicine for the treatment of skin itches, as an antiseptic for wounds, and externally for leprosy and scabies. The objective of our study is to investigate burn wound healing activity of the leaf extract of *L.camara* in rats^[35].
- 4. Anti-mycobacterium activity :** Chloroform and methanol extracts of *L. camara* collected from South-western Uganda were screened against three strains of *Mycobacterium tuberculosis* using the agar-well diffusion method. The methanol extract showed the highest activity against all the three strains used^[36].
- 5. Antihyperglycemic activity :** The antihyperglycemic activity was also performed using methanolic extract prepared from *L. camara* leaf tissues and subjected to alloxan-induced diabetic rats^[37].
- 6. Antipyretic activity :** The antipyretic activity of *L.camara* was determined by using ethanolic and ethyl acetate extracts. The results showed a decrease in body temperature from the 1.5th hour. However, the antipyretic activity for both the extracts was significant ($P < 0.01$) between the 2nd and 3rd hour as compared with the negative control^[38].

CONCLUSION:

The current study shows the phytochemical constituents, pharmacological activities, pharmacognostic study of the polyherbal plants. By reviewing the importance of herbal plants like *Azadirachta indica*, *Mimosa pudica*, *Camara lantana* etc. polyherbal plants should have less side effects and hence they have role in the prevention and cure of the diseases.

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