

Valorization of Tridax Procumben

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ABSTRACT

Tridax plant found in India. Nature has been source of thousands of years. Tridax procumbens is commonly known as 'Coat Button' or 'Kansari' (hindi) or 'Ghamara' (in local language) and belongs to family 'Asteraceae' is an Ayurvedic herb in Asia with history of traditional use. Tridax procumben in ancient times to treat wound healing, skin disease, antifungal, antibacterial, anticonvulsant and treatment of infection disease diarrhea to stop blood clotting in folk medicine possesses Wound healing, antibacterial, antifungal, hypotensive, anticancer, Anti Inflammatory agent, Anti diabetic, Anti-obesity antimicrobial, and insecticidal properties. This plant distributed as 'Bhirngraj' well known liver disorder drug. Useful function of living tissue due to physical, chemical, microbic and electric shock. This plant use to treat protozoal disease such as malaria and diarrhea. leaf juice used to treat ulcer prevent bleeding and viral infection. Many pathogenesis bacteria are becoming increasingly resistant to many commonly used antibiotics including penicillin macrolide.

KEYWORDS: *Tridax procumbens*, *Asteraceae*, *Bhirngraj*, *Lorkes*

INTRODUCTION

India is a rustic wherein wealthy culture, peoples medicinal drug & nature pass hand in hand. India is blessed with this kind of extensive unfold peoples medication known as Tridax procumbens Linn commonly called "Ghamra" & in English popularly called 'coat buttons' due to the resemblance of its plant life with coat buttons. This plant of Asteraceace own circle of relatives became introduced in China in 1940¹. Tridax plant is discovered all through India and is hired as a home medicine for a unfold of diseases. Tridax procumbens has been huge hired in Indian classical remedy for wound recovery, antifungal, anticoagulant, and computer virus repellent belongings and moreover utilised in remedy of infectious disorder and diarrhea². Tridax procumbens is shipped as 'Bhringraj' that could be a famous Ayurvedic liver sickness drugs³. The wound has been defined due to disruption of the anatomical or beneficial feature of residing tissue because of physical, chemical, microbic or electric shock. Wound restoration is the body's method of creating dermal and epidermic tissue⁴.

ORIGIN:

The plant is local of tropical America & naturalized in tropical Africa, Asia, Australia & India. It is a wild herb dispensed all through India. Its tremendous distribution & significance as a weed are because of its spreading stem & plentiful seed production⁸. It is great called massive weed and pest plant may be determined in fields, meadows, croplands, disturbed areas, lawns, and roadsides. It is a semi prostrate, annual, creeper herb.



Figure 1. Tridax Procumbens plant

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Table 1: Synonyms of *Tridax Procumbens* Linn⁵

| |
|---|
| <i>Chrysanthemum procumbens</i> |
| <i>Balbisia canescens</i> |
| <i>Balbisia divericata</i> |
| <i>Balbisia pedunculata</i> |
| <i>Tridax procumbens</i> var. <i>Canescenes</i> |
| <i>Tridax procumbens</i> var. <i>ovatifolia</i> |

Table 2: Common Name

| | |
|--------------|-------------------------------|
| 1. English | Coat Buttons and Tridax Daisy |
| 2. Hindi | Ghamra |
| 3. Marathi | Dagadi pala |
| 4. Sanskrit | Jayanti Veda |
| 5. Telugu | Gaddi Chamanthi |
| 6. Tamil | That pudu |
| 7. Malayalam | Chiravanak |

Table 3: Botanical classification ⁶

| |
|--|
| KINGDOM:- Plantae- Plants |
| SUB-KINGDOM :- Tracheobionta- Seed Plants |
| DIVISION:- Magnoliophyta- Flowering plants |
| CLASS:- Magnoliopsida- Dicotyledons |
| SUB CLASS:- Asteridae |
| ORDER:- Asterales |
| FAMILY:- Asteraceae- Aster Family |
| GENUS :- <i>Tridax</i> L- <i>Tridax</i> |
| SPECIES:- <i>Tridax procumbens</i> (L) coat button |

MORPHOLOGICAL DESCRIPTION:

FLOWERS:- It plant life at some stage in the 12 months in lengthy peduncled heads. Flowers are small, tubular, whitish yellow with hairs. Inflorescence is capitulum. It beare styles of flower-ray florets & disc florets with basal placentation⁸. They are approximately 0.4-0.6 inches (1-1.5 cm) wide, and hung on a 4-12 inches (10-30 cm) lengthy stalk. Flowering happens in spring. The plant vegetation are searching like daisy.



Figure 2. Flowers of *Tridax Procumbens*

LEAVES: Leaves are simple, contrary, entire, hairy, not often pinnatisect, exstipulate and rapidly petioled. Leaf form is lanceolate-ovate with wedge formed base and acute apex. It is 3-7 cm lengthy forty-five cm with lengthy irregularly toothed margin⁸



Figure 3. Leaves of *tridax procumbens*

GENETICS-the chromosome numbers of *Tridax procumbens* has been registered as 2n-36. ⁹

SEEDS- Seeds have pendulous embryo, endosperm is absent⁸

ROOT- *T. procumbens* has a faucet root system.⁸



Figure 4. Roots of *Tridax Procumbens*

STEM- Stem is herbaceous, cylindrical, decumbent & branched ⁸

CHEMICAL CONSTITUENTS:

Flavanoid (procumbenetin) remoted from the aerial components of *Tridax procumbens* has been characterised as 3, 6 –dimethoxy-5, 7, 2', 3', 4'-pentahydroxy flavone 7- O--D-glucopyranoside¹ on the premise of spectroscopic techniques & with the aid of using chemical means. Isolation of methyl 14 oxoacagaecunoate, methyl 14- oxononacosanoate, 3-methyl-non adecylbenzene, hepatocosanyl cyclohexane carboxylate, 1-(2, 2, dimethyl3-hydroxy propyl)-2- isobutyl phthalate, 12- hydroxytetracos-15-one, 32-methyl-30-ozotetraatria cont-31-en-1-ol together with amyirin, amyrone, fucosterol &

sitosterol, arachidic, behenic, lauric, linoleic, linolenic, myristic, palmitic & stearic acids had been removed¹⁰. It is likewise a capacity supply of the protein supplements & seasoned nutrition A (carotenoid)¹.

USES

TRADITIONAL USES: It is broadly used as an anticoagulant, hair tonic, antifungal and insecticide, in bronchial catarrh, diarrhea, and wound healing. Traditional and complementary medication are more and more more diagnosed as an incorporated technique to fitness care in lots of countries (WHO, 2013). The use of flora for medicinal functions may also date returned to the Middle Paleolithic period, approximately 60,000 years ago. *T. procumbens* is observed for use to deal with anemia, fever, inflammation, and Central hepatopathies. Guatemala worldwide. *T. procumbens* are used as an antibacterial, antifungal, and antiviral. The entire plant is used to deal with protozoal illnesses inclusive of malaria, leishmaniasis and diarrhea. Leaf juice is used to deal with ulcers and to save you bleeding. This kind is likewise used to deal with belly and intestinal illnesses, excessive blood stress and diabetes. Watery *T. procumbens* have robust antiplasmodial pastime in opposition to chloroquine-resistant¹¹.

MEDICINAL USES: Aqueous leaves extract possesses cardiovascular impact and considerably reduces coronary heart price and blood strain. Lyophilized aqueous leaf extract confirmed anti-inflammatory motion similar to ibuprofen and aspirin. Whole arial components have hepatoprotective, antisecretory (antidiarrheal) hobby. It is lively towards bacteria, protozoa and fungi. Leaf juice is beneficial in lifeless area wound healing. Seeds are used to test all types of bleeding. Aqueous extract of entire arial component is used as immunomodulator. Dry extract confirmed antibiotic interest even if formulated in mineral base¹².

PHARMACOLOGICAL ACTIVITY:

1. WOUND HEALING ACTIVITY =

Wound restoration is a complicated and dynamic method has the capability to repair the cellular systems and tissue layers. The leaf juice of *Tridax procumbens* turned into proven to suppress wound penetration in experimental animals - Wound recuperation is a complicated and dynamic manner has the capacity to repair the cellular systems and tissue layers. Whole plant of *Tridax procumbens* L. Water extract has capacity to set the regular and immune compromised wound recovery in rats¹³. *Tridax* antagonized antiepitheization and tensile electricity miserable impact of dexamethasone (a recognised recovery suppressant agent) without

affecting anticontraction and antigranulation motion of dexamethasone. Aqueous extract turned into additionally powerful in growing lysyl oxidase however to a lesser diploma than complete plant extract. Further it's been proven that extract of leaves of this plant additionally promotes wound restoration in each every day and immunocompromised (steroid treated) rats in useless area wound recuperation model. The plant boom now no longer best lysyl oxidase however additionally, protein and nucleic acid content material withinside the granulation tissue, in all likelihood as a end result of boom in glycosamino glycan content material¹⁴.



Figure 5. Pharmacological activity of tridax procumbens

2. ANTIMICROBIAL ACTIVITY :

Whole plant of *Tridax* has said for its anti microbial pastime on numerous species of bacteria. Fresh plant juice while implemented two times an afternoon for 3-four days remedies cuts & wounds. Whole plant extract whilst used towards four traces of bacteria –2 gram positive-Bacillus subtilis, Staphylococcus aureus & Gram bad Escherichia coli & *P. aeruginosa* confirmed anti bacterial hobby most effective towards *P. aeruginosa*. An complete plant is squeezed among the hands of arms to gain juice that is implemented two times an afternoon for four-five days to treatment cuts and wounds. The extract of the entire plant confirmed anti-microbial belongings most effective towards *Pseudomonas aeruginosa* with the assist of disk diffusion assay¹⁵.

3. ANTIBACTERIAL ACTIVITY

The herb *Tridax procumbens*, determined in tropical nations, is provided with antibacterial properties. Our observe tested that this hobby turned into related simplest with the ethanolic extract and become prominently visible best towards *Pseudomonas aeruginosa* lines. Multi drug secure nosocomial styles of *Pseudomonas* removed from ventilator associated pneumonia, urinary tract contamination in addition to

blood movement contamination indicates big sensitivity to Tridax extricates¹⁶.

4. HYPOTENSIVE

Cardiovascular impact of aqueous extract of *T. procumbens* leaf became examined on anaesthetized Sprague Dawley rat. The aqueous extract precipitated enormous dose based lower in mean arterial blood pressure. The better dose results in good sized discount in coronary heart charge whereas decrease dose did now no longer purpose any extrade withinside the same. Thus leaves of *T. procumbens* confirmed hypotensive effects¹⁷.

5. ANTIFUNGAL ACTIVITY:

Tridax procumbens Linn Plate dissemination study changed into achieved in opposition to pathogenic contagious strains. Minimum inhibitory concentrations (MIC), minimal fungicidal concentrations (MFC) and absolute motion have been moreover assessed for warranty of antifungal functionality of each dynamic concentrate. The flavonoid eliminates confirmed unexpected motion towards *A. niger* alaven though alkaloid gets rid of had been considered as inert towards both the check parasites. Incredible antifungal capacity turned into recorded with the expectancy of complimentary flavonoid of stem and certain flavonoid of stem and flower *A. niger*. Study indicated that *T. procumbens* may be used as a supply of formulations of antifungal drug for remedy of sicknesses because of *A. niger*¹⁹.

6. ANTI INFLAMMATORY ACTIVITIES

irritation is one of the 3 stages of wound healing, *T. procumbens* turned into evaluated for its anti-inflammatory ability. An in advance take a look at confirmed that aqueous extract of *T. procumbens* exhibited a dose dependant inhibition of paw extent in carrageenan brought on rat paw edema and cotton pellet granuloma version in addition to substantial discount in mobileular migration in comparison to control¹⁸.

7. ANTIDIABETIC ACTIVITY

The alcohol and water extract of *Tridax procumbens* Linn. leaves having antidiabetic hobby that's extensively lower withinside the blood glucose level. Antidiabetic interest examined withinside the version of alloxan caused diabetes in rats *T. procumbens* methnol extract of fifty percentage of acute and sub continual dose administrated via way of means of oral suggests to reduces fasting blood glucose tiers in diabetic rats. This plant cloth does now no longer have an effect on the sugar ranges in ordinary rats¹⁹.

8. ANTI-CANCEROUS ACTIVITY

The anticancer pastime of *Tridax procumbens* changed into examined on prostate epithelial

cancerous cells PC3. *Tridax* plant life have been extracted with water and acetone. Anticancer interest turned into decided with the aid of using MTT assay with mobileular viability. Both extracts had been examined on mobileular viability assay. In this test the simple system primarily based totally at the yellow soluble salt MTT modified into to crimson blue insoluble Formazan precipitate. This system accomplished through the mitochondrial succinate dehydrogenase that's produced through feasible cells. Viable cells are quantified spectrophotometrically at 570 nm. The acetone flower extract confirmed 82.28 % most cancers mobileular demise inside 24 hrs and water extract exhibited a totally vulnerable anticancer pastime. The outcomes of this evaluation discovered the truth that flower crude extract has anti-most cancers hobby²⁰.

9. ANTI-OBESITY ACTIVITY

In a studies investigation, the animal receiving remedy with the plant decoctions confirmed a huge discount in general ldl cholesterol, triglycerides, overall protein, loose fatty acids and elevation of highdensity lipoprotein ldl cholesterol level²¹.

10. INSECTICIDAL ACTIVITY

The important oils remoted from *T. procumbens* exhibited insecticidal sports in opposition to house flies, mosquito larvae, *Dysdercus similes* and cockroaches. Essential oils of *T. procumbens* are exceedingly potent, famous robust insect repellent activity, while examined towards 3 varieties of ants. It became found for the duration of the gathering of *T. procumbens* that the plant is neither attacked via way of means of nor grazed via way of means of cattle's suggesting that the plant life posses' insect repellent or insecticidal activity¹².

TOXICITY STUDIES:

From diverse studies the decoctions of *Tridax procumbens* have been stated to have specific pharmacological effects. The acute toxicity examine become carried out via way of means of the use of the technique of Lorkes²². The end result of acute toxicity turned into primarily based totally on intraperitoneal management in which the compound withinside the decoctions changed into at once transported via the blood and circulated to the goal organ to show off their toxicity. The management to the take a look at animal turned into oral, and the LD50 may also be plenty better because the decoctions will go through metabolism to provide a brand new product which will be much less toxic. After acute management, symptoms and symptoms of toxicity found including salivation, nose, and mouth at the ground of the cage and restlessness. The LD50 of the decoctions became 2100 mg/kg frame weight, and all of the survived

animals won frame weight and organ ratio in comparison to the untreated control²³.

Conclusion:

Tridax procumbens Linn. is broadly allotted weed. Each part of it's miles beneficial having pharmacological activity. The plant product over artificial compound is the want in remedy of diseases, because it does now no longer have any deleterious impact in better animals which include man. The paintings executed confirmed that the extraordinary extracts of plant have capability antibacterial activity. This plant extensively disbursed and it's every and each component having noble pharmacological activity. The paintings carried out until todate on its pharmacological sports like hepatoprotective impact; immunomodulating property, promising wound recuperation activity, antidiabetic, hypotensive impact, antimicrobial, insect repellent activity, anti inflammatory, antifungal, anticancerous, antiobesity, antibacterial. *Tridax Procumbens* indicates presence of some of precious components which include flavone Glycoside, glycoside, bithiophene, flavonoid, sterols, terpenoids, lipids and polysaccharides. The plant additionally prevents hair fall and is used as a hair boom promoter. This overview tries to awareness at the advantages and why it's far essential to keep learning flowers which are acknowledged for use in conventional medication that would cause the invention and improvement of recent not unusualplace medicines.

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