WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 12, Issue 7, 925-931. Review Article ISSN 2277– 7105

TRADITIONAL USES AND PHARMACOLOGICAL ACTIVITIES OF MEDICINAL PLANT TRIDAX PROCUMBENS LINN: A REVIEW

Abhijit Mande*, Sabiya Mulani, Muskan Mujawar, Trupti Jagtap and Omkar Gaikwad

Baramati College of Pharmacy, Barhanpur, Tal- Baramati, Dr. Babasaheb Ambedakar Technological University, India.

Article Received on
17 March 2023,

Revised on 07 April 2023,
Accepted on 27 April 2023

DOI: 10.20959/wjpr20237-28050

***Corresponding Author**
Dr. Abhijit Mande
Baramati College of Pharmacy, Barhanpur, Tal- Baramati, Dr. Babasaheb Ambedakar Technological University, India.

ABSTRACT

Tridax procumbens Linn. (Tridax) family composite, which is also known as "Ghamra" and is sometimes referred to in English as "coat buttons" due to the way the blooms look. Tridax procumbens is a common weed of cultivation, waste ground plant, or invader of bare soil that is utilised extensively in Indian traditional medicine. For all the pertinent information regarding the pharmacological studies, several scientific publications have been obtained from various scientific search engines like PubMed, Elsevier, Google Scholar, Science Direct, and Research Gate. Amongst the biological activities of various Phytochemical present in the plant, acting as free radical scavenger, actions against inflammation, allergies, platelet aggregation, microbes, tumours, hepatotoxins. The ethyl Acetate extracts of the "coat buttons" showed effective inhibition against the Staphylococcus aureus as compared to other organism. Therefore the leaves of coat buttons can be considered to be the bright source of antimicrobial compounds. This review can also be useful for providing important information of this species and show that this species could be an effective, safe and affordable treatment for some ailments, especially in tropical areas where this plant is easily available.

INTRODUCTION

Tridax procumbens is commonly known as "coat buttons". In India is known as "Dagadi Pala". It is a common plant found in tropical, sub-tropical and mild temperatures region through out world wide. It is a wild herb distributed through out of all India. 30% of current conventional medications are derived from plant sources, and about 80% of the world's

population uses plants to treat a variety of common maladies. Herbs have been used safely and successfully for many centuries, and they don't typically have the negative side effects of synthetic medications. In ancient time this plant used in Ayurveda in India commonly for liver disorder. Tridax procumbens has many pharmacological activities such as Immunomodulatory, Antioxidant, Antidiabetic, anti-inflammatory, Anti-fungal, analgesic, Antihypatotoxic. The connection of traditional knowledge and scientific knowledge is important for future studies.[1,2,3]

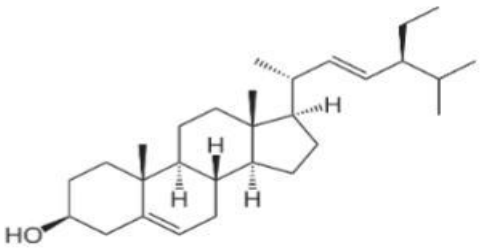
Taxonomy[5]

Kingdom	**Plantae-plants**
Subdivision	Tracheobinota-vascular plants
Class	Magnoliopsida – flowering plants
Order	Asterales
Genus	Tridax L- tridax
Family	Asteraceae -Aster family
Species	Tridax procumbens *L.* Coat buttons
Botanical name	Tridax procumbens

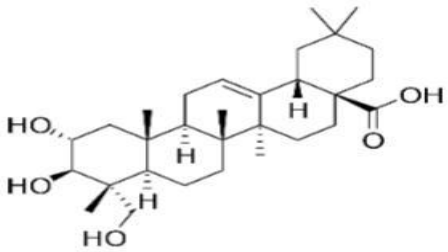
Chemical composition[4,5,10,11]

1. Flavonoids, carotenoids, alkaloids, tannins, and saponins were found in the phytochemical analysis. The plant is high in salt, potassium, and calcium, as shown in the adjacent profile.
2. Proteins, fibre, carbohydrates, and calcium oxide are the primary components of Tridax Procumbens leaf. The plant has also been shown to contain fumaric acid and tannin.
3. Oleanolic acid, which was found to be a potential hypoglycemic medication, was present in Tridax in good amounts. There is evidence of the plant's alkaloids, flavonoids, carotenoids, fumaric acid, lauric acid, tannins, and other chemical components.
4. T. Procumbens has high moisture content of 88.30% in the stem and 90.05% in leaf. It is rich in protein with 37.44% dry weight (4.38% wet weight) in the stem and 34.57% dry weight (3.44% wet weight) in leaf. The total lipid and carbohydrate content in the stem is 0.85% dry weight (0.1% wet weight) and 41.03% dry weight (4.80% wet weight) respectively, and that in leaf is 6.03% dry weight (0.6% wet weight) and 51.26 % dry weight (5.10% wet weight) respectively. T. Procumbens is about 321.54 Kcal in dry weight (37.62 Kcal in wet weight) for stem and 397.59 Kcal in dry weight (39.56 Kcal in wet weight for leaf

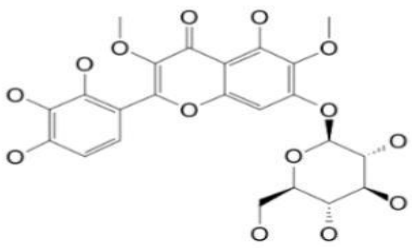
Stigmasterol



Oleanolic acid



3,6-Dimethoxy-5,7,2',3',4'-pentahydroxyflavone
7-O- Beta-D-glucopyranoside



Uses[2,6,8,10,12]

1. Aqueous Extract of the leaves of T. Procumbens is an Efficacious envoy in the therapy and prohibition of Carbon tetrachloride-induced hepatic cytotoxicity.
2. A weed named Tridax procumbens Linn. (Compositae) present all around the India and is working as local medicine For a variety of ailments, including jaundice.
3. In addition to immunomodulating albino rats given Pseudomonas aeruginosa, ethanol extracts of Tridax leaves also suppress the growth of the same.
4. Aqueous and alcoholic extract of leaves of Tridax appeared a remarkable drop in the Blood dextrose level in the representation of alloxan-produced Diabetes in rats.
5. The extract of whole plant of Tridax showed antibacterial activity only against P. aeruginosa.
6. Aqueous extract was also effective in Increment in lysyl oxidase minorly degree than whole Plant extract. The plant increase lysyl oxidase as well as protein and nucleic acid content in the granulation tissue apparently as a result of increase in glycosaminoglycan content
7. Extract of Leaves of this plant also encourages wound recovery in both Normal and immunocompromised (Steroid treated) rats In dead space wound healing model.

Pharmacological activity[7,8,9,10,11,12]

1. **Anti-microbial:-** Various strains of bacteria and fungi have shown suseptibility to the antimicrobial possessions of T. procumbens. silver nanoparticles that showed some antimicrobial activity opposite to E. coli, V. cholerae, A. niger, and A flavus.Petroleum, ether and ethanolic abstraction of leaves of T. procumbens showed antibacterial activity opposite to Bacillus Faecalis.The chloroform abstraction showed antibacterial activity against B. faecalis, B. subtilis, Bacillus coli, and Pseudomonas aeruginosa. Quintessence from T. procumbens show the attendence of alpha and beta pinenes, used in minute quantities can help in serve bacterial and fungal contaminations.

2. **Anti-fungal:-** The best zone of inhibition against many fungal species, including Candida albicans, Trichosporon beigelii, Trichophyton rubrum, Microsporum mentagrophytes, and Microsporum fulvum. Abstracts of this plant's aeriform nature have demonstrated efficacy against dermatophytes, with the strongest response coming from the Methylene dichloride fraction in a combat area extending from 17 to 25 mm.

3. **Antibiotic:-** Tridax abstracts have shown to activity opposite to numerous bacterias. Hexyl hydride extracts have action against Mycobacterium smegmatis, E.coli, Klebsiella sp., Salmonella group C, and Salmonella paraphyte. The ethyl acetate abstract was effectual Opposite to optimistic bacteria such as Bacillus cereus, Bacillus smegmatis, micrococcus aureus, and Gram-negative bacteria such as Klebsiella sp. Anti-parasitic--Treatment of some diseases caused by protozoal infections like malaria, dysentery etc. Tridax seemed to have anti-leishmanial activity using crude extract. Ghana tested the antiplasmodial effect of aqueous, chloroform, ethyl acetate, and ethanolic extracts from the flowers, leaves &stem. It helped protect red blood cells from P. falciparum damage.

4. **Antioxidant:-** Free electrons have an unpaired electron include hydroxyl radicals, hydrogen peroxides. High antioxidant activity of Tridax using n-butanol & ethyl acetate fractions from methanolic extracts. T. procumbens is also help to reduce lipid peroxidation & induce enzymatic and non-enzymatic antioxidants. It possess high content of phenols, flavonoids, anthraquinone, carotenoids, vitamins A & C. It helps to reduce stress when using the DPPH assay. Abstract from the leaflet of the plant drop the seriousness of carrageenan-increase rat paw swelling. The plant extract did not produce ulceration and proved to be safer than aspirin and phenylbutazone.

5. **Hepatoprotective:-** T. procumbens helps to reducing oxidative stress in liver. Liver stress caused by viral hepatitis, drug intoxication, and lipid peroxidation from a reactive oxidative species. Petroleum ether, methanol & chloroform water extracts from flowers showed protection against hepatotoxicity in Male Wister Albino Rats, with the methanolic extract. An ethanolic extract from leaves of T. procumbens that was cleave with chloroform showed superior antihepatotoxicity activity in rats that had persuade hepatitis by d-Galactosamine Lipopolysaccharide. Rats that were treated with only the T. procumbens extract showed to no adverse reactions & no toxicity.T. procumbens has shown to intensify the body's expansive resistance opposite to pathogens. Means it also have immune enhancement activity.

6. **Antidiabetic:-** T. procumbens has shown antidiabetic properties. Streptozotocin induced Male Wistar albino diabetic rats were given methanolic extract, it had antidiabetic activity that is comparable to the drug Glibenclamide used to treat diabetes mellitus type 2. The extracts also showed a positive effect against hyperlipidaemia associated with diabetes mellitus. The plant extracts were given to rats in 250 or 500 mg/kg doses, nhi the

Glicuformine was given at a 10 mg/kg dose. The results showed that either dosage of the plant extract lowered the blood glucose levels in the rats by 10.96%-13.74%. Oral administration of aqueous and alcoholic extracts from the leaves of T. procumbens significantly decreased blood sugar be in Alloxan-induced Wistar diabetic rats. Procumbens used ether, methanol, and chloroform to reduce the rate of alpha amylase and alpha glucosidase enzymes. Alpha-amylase and the Alpha-glucosidase enzymes are responsible for the breakdown of carbohydrate molecules.

7. **Antihypertensive:-** In Benin and other countries, T.procumbens has been traditionally used for the treatment of hypertension. From a basic aqueous extract, the plant's aerial portions were employed to produce cyclohexane, micellar, dichloromethane, and ethyl acetate fractions. The ethyl acetate and dichloromethane fractions were most effective in lowering the mean arterial pressure. The flavonoids can be responsible for vasorelaxation, It is also said that flavonoids may have a diuretic effect that may also explain part of the plants antihypertensive activity.

CONCLUSION

Tridax procumbens is commonly found in overall world. It is good source of plant protein. Every part having noble pharmacological activities. Activities like analgesic, antidiabetic, antioxidant, antifungal, antimicrobial, anti-inflammatory. In future, there is huge room for research in direction of more pharmacological activities of plant and to elucidate the mechanism of action of same

ACKNOWLEDGEMENT

With lots of respect to my family and my colleague, I would like to grateful thanks to my college B.C.O.P college of pharmacy for permitting me to do this review article. Special thank to my Friends, respected Teacher’s and Co-authors give us lots of information and valuable time, thank for support. I also thankful of World Journal of pharmacy and Pharmaceutical Science, who gives me this opportunity to publish our review article.

REFERENCE

1. Kumar. S, Prasad. A, S. V. Iyer; pharmacognostical, phytochemical and Pharmacological Review on Tridax procumbens Linn.; International journal of Pharmaceutical and Biological Archives, 2012; 1- 5.

2. Ingale. N. A, Dubey. H, Naupreetkaur; Tridax procumbens: A multiuseful weed. A review; Journal of advanced oral reasearch, 2014; 1-3: 5.
3. Mundada. S, Shivhare. R; Pharmacology of Tridax procumbens a Weed: Review; International Journal of PharmTech Research, 2010; (2).
4. Suryawanshi. H. P, Jain. A, Pawar. S. P; A descriptive study and in-vitro antioxidant activity of leaves extracts of tridax procumbens Linn; Journal of medical pharmaceutical and allied sciences, 2021; (1-4).
5. Bhagat. V. C, Kondawar. M. S; A comprehensive review on Phytochemistry and Pharmacological use of Tridax procumbens Linn.; Journal of Pharmacognosy and Phytochemistry, 2019; 8(4): 01-10.
6. Bhagwat. D. A, Killedar. S. G, Adnaik. R. S; Anti diabetic activity of leaf extract of Tridax procumbens; International journal of green pharmacy, 2008; 126-128.
7. Beck. S, Mathison. H, Todorov. T; A review of Medicinal Uses and Pharmacological Activities of Tridax procumbens (L); Journal of plant studies, 2018; 7: 19-29.
8. Ravikumar. V, Shivashangari. K. S, Devaki. T; Hepatoprotective activity of Tridax procumbens against d-galactosamine/lipopolysaccharide-Induced hepatitis in rats. J Ethnopharmacol, 2005; 101: 55-60.
9. Oladunmoye MK. Immunomodulatory effects of ethanolic extract of Tridax procumbens on swiss Albino rats orogastrically dosed with Pseudomonas aeruginosa (NCIB 950). Int J Trop Med, 2006; 1: 152-5.
10. Nia R, Paper DH, Essien EE, Oladimeji OH, Iyadi KC, Franz G. Investigation into in-vitro radical scavaging and in-vivo anti-Inflammatory potential of Tridax procumbens. Niger J Physiol Sci, 2003; 18: 39-43.
11. Runsheg Xu, Jing Zhang, Ke Yuan; Two flavones From Tridax Procumbens Linn. Molecules, 2010; 15: 6357-6364.
12. Tiwari U, Rastogi B, Singh P, Saraf DK, Vyas SP. Immunomodulatory effects of aqueous extract of Tridax procumbens in experimental animals. J Ethnopharmacol, 2004; 92: 113-9.