

A Review on Ethnobotanical Status of *Tridax Procumbens*

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ABSTRACT: *Tridax procumbens* is a plant genus of the family Asteraceae. A wide range of *Tridax procumbens* species is used as traditional medicine. It is mainly found in tropical fields, meadows, disturbed areas, Asia and Australia. Present review focuses on the reports available in various literatures. *Tridax procumbens* possess various pharmacological activities such as antibacterial, antiplasmodial, anti-hepatotoxic, anti-oxidant and antimicrobial. These results are very encouraging and hence this review was intended to study about the plant more extensively to confirm pharmacological activities and other potential benefits of *Tridax procumbens*.

KEY WORDS: *Tridax procumbens*, Botanical description, Pharmacological activities, Chemical constituents

I. INTRODUCTION

Tridax procumbens, which belongs to the family Asteraceae, is used as traditional herbal medicine in Africa, Asia, Australia, and Nigeria and is ethnobotanically used for the treatment of bronchial catarrh, dysentery, malaria, diarrhoea, and high blood pressure. It is an annual herbaceous plant.

SYNONYMS OF TRIDAX PROCUMBENS

- *Balbisia canescens* Rich

- *Balbisia longata* Willd
- *Balbisia divaricata* Cass
- *Amellus pedunculatus* Ortega ex Willd

VERNACULAR NAMES

- English: Coat-button, Coat Buttons, Mexican daisy, *Tridax* Daisy, Wild Daisy
- Hindi: Akal Kohadi, Khal-muriya, Tal-muriya
- Tamil: Kenathuppondu, Seruppadithalai, Seruppadithazhai
- Malayalam: Kumminnipacha, Kurikooticheera, Muriyampachila, Odiyancheera,
- Telugu: Gaddichamanthi

SCIENTIFIC CLASSIFICATION OF TRIDAX PROCUMBENS

Kingdom	-	Plantae
Sub Kingdom	-	Tracheobionta
Superdivision	-	Spermatophyta
Division	-	Magnoliophyte
Order	-	Asteridae
Family	-	Asteraceae
Species	-	<i>Tridax Procumbens</i>

Table no1: Botanical description of *Tridax procumbens*

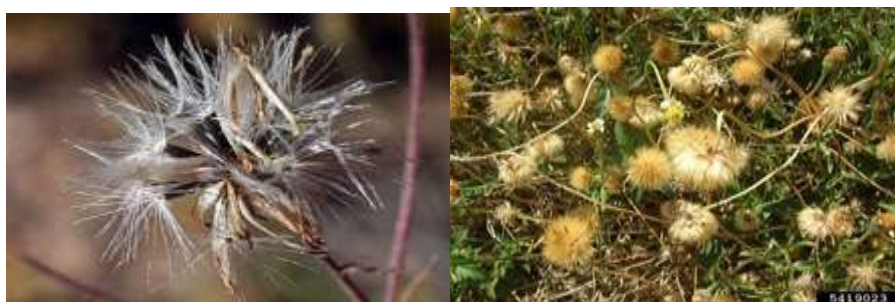
Habit	Herb
Root	Tap root
Stem	Herbaceous, Cylindrical and Branched

Leaves	Simple, opposite, exstipulate and margins dentate showing reticulate venation. Leaves are toothed and generally arrowhead-shaped.
Inflorescence	The plant bears daisy like yellow-centered white or yellow flowers with three-toothed ray florets. A terminal heterogamous head and receptacle of the head is convex and surrounded by green involucre.
Seeds	Non-endospermous
Calyx	Reduced into numerous hairy outgrowths called pappus arranged on top of ovary
Corolla	Petals 5, gamopetalous, regular, tubular and showing valvate aestivation.
Fruit	Hard achene covered with stiff hairs and having a feathery, white pappus at one end.



Flower

Leaf

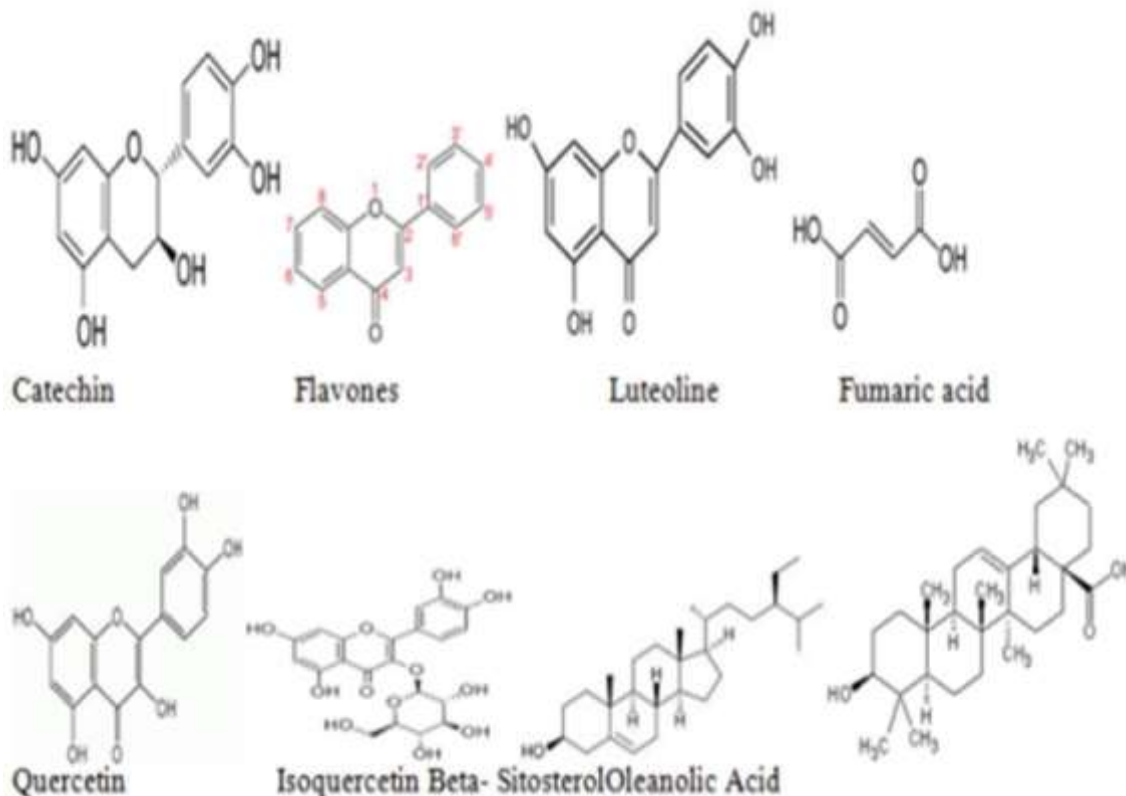


Seed

Stem

CHEMICAL CONSTITUENTS

The major chemical constituents are catechin, flavones, luteoline, Fumaric acid, Quercetin, Isoquercetin Beta-sitosterololeanolic acid.



ETHNOBOTANICAL STUDIES

Bhagwat D. A. et al., 2008 -Dried aqueous, alcoholic, and petroleum ether (60- 80°C) extracts of leaves of *Tridax procumbens* were subjected for hypoglycaemic activity in Wistar rats (150-200 g). Blood sugar level was determined using digital glucometer. Experimental studies reveals that the aqueous and alcoholic extracts from *Tridax procumbens* leaves (200 mg/kg) orally administered for 7 days produced a significant decrease in the blood glucose level in the model of alloxan-induced diabetes in rats. Petroleum extract exhibits weak anti-diabetic activity. It also proves the traditional claim with regard to *Tridax procumbens* for its anti-diabetic activity.

Agrawal S. S. et al., 2009 - *Tridax procumbens* plant extracts were evaluated for in vitro antioxidant activities. DPPH method provides a good assessment for evaluation of in vitro antioxidant activity. It is based on reaction between antioxidant (AH) with nitrogen centered free radical i.e., DPPH (1, 1- diphenyl, 2-picryl hydrazyl). The Ethyl acetate and nButanol fractions from methanolic extract have shown significant

activity which is comparable to the activity of Ascorbic acid. Fractionation of the parent extract reduced the complexity of material and provided more accurate idea related to the Phytochemicals, responsible for antioxidant activity of *Tridax procumbens*

Prabhu V. V. et al., 2011 - Lyophilized extract of *Tridax procumbens* was found to be potent analgesic. In accordance to the present study, it has been observed that *Tridax procumbens* has marked beneficial effects against centrally, peripherally and inflammatory pain models. This protective action may be attributed towards the presence of flavonoid and sterols. We would like to conclude that it is worthwhile to think, to use *Tridax procumbens* as drugs and further studies should be initiated to establish exact mechanism of action and elaborative phytochemical investigations to find out which active constituents responsible for analgesic activity. These reports may serve as a foot step in the research of potent analgesic drug, used in diarrhoea and dysentery.

Pai C. et al., 2011 - The herb *Tridax procumbens*, found growing commonly in tropical

countries, is endowed with antibacterial properties. Our study demonstrated that this activity was associated only with the ethanolic extract and was prominently seen only against *Pseudomonas aeruginosa* strains. Multi drug resistant nosocomial strains of *Pseudomonas* isolated from ventilator associated pneumonia, urinary tract infection as well as blood stream infection showed significant sensitivity to Tridax extracts. Our study corroborates the efficacy of Tridax as an anti-pseudomonal agent and its value as a source of formulations for treatment of nosocomial infections caused by *Pseudomonas aeruginosa*.

Opong R. A. et al., 2011 - The aqueous and ethanolic extracts of *Tridax procumbens* have antiplasmodial activity against chloroquine resistant *P. falciparum* parasites. The extracts have considerably low toxicities to human RBCs. These results lend support to claims of herbalists that decoctions of *Tridax procumbens* are useful medicines. These notwithstanding, more comprehensive animal toxicity studies need to be carried out on the plants, especially since humans are currently using them to treat malaria and other diseases.

II. CONCLUSION

T. procumbens is a major medicinal plant used since before recorded history in both organized (Ayurveda, Unani) and unorganized (folks, tribal, indigenous) traditional medicine practices. The Recent technological invention in identifying, isolating and validating active principles from medicinal plants has gained importance as these may provide an excellent source of lead molecules for the treatment of various disease conditions. In this context, *T. procumbens* appears to be a very promising medicinal plant containing many active molecules evident by its vast medicinal and pharmacological properties. This review provides comprehensive information about the therapeutic, toxicological and clinical value of *T. procumbens*. Though studies have identified the clinical potential of different parts of the plants, there still needs a scientific basis for the medicinal use of this plant.

REFERENCE

[1]. Baker, H. G.: *Plants and Civilization*. 2nd ed. Macmillan Press Limited, New York, (1970).
[2]. Ved, D.K., Goraya, G.S.: *Demand and Supply of Medicinal Plants in India*,

National Medicinal Plant Board, New Delhi & FRLHT, Bangalore, India, (2007).
[3]. Durgacharan A. Bhagwat, Suresh G. Killedar, Rahul S. Adnaik: Antidiabetic activity of leaf extract of *Tridax procumbens*, *International Journal of Green Pharmacy*, 2(2): 126- 128 (2008).
[4]. Chitra Pai, Ujjwala Kulkarni, Manjusha Borde, Sowmya Murali, P. Mrudula and Yashwant Deshmukh: Antibacterial Activity of *Tridax procumbens* with special reference to Nosocomial Pathogens, *British Journal of Pharmaceutical Research* 1(4):164-173 (2011).
[5]. Rappiah-Opong, AK Nyarko, D Dodoo, FN Gyang, KA Karam and NK ayes: Antiplasmodial activity of Extracts of *Tridax procumbens* and *Phyllanthus Amarus* in in Vitro Plasmodium Falciparum Culture Syatems, *Ghana Med J.* 45(4): 143-150 (2011).
[6]. ReddipalliHemalatha: Anti-hepatotoxic and Anti-oxidant defence potential of *Tridax procumbens*, *International Journal of Green Pharmacy* 2(3):164-169 (2008).
[7]. Sneha Mundada and Ruchi Shivhare: Pharmacology of *Tridax procumbens* a weed: Review, *International Journal of Pharma Tech Research* 2(2):1391-1394 (2010).
[8]. Trease G.E., and Evan W.C.: *Pharmacognosy*, Ed 12, 706-708, (1983).
[9]. Kokate C.K, Purohit A. P. and Ghokhale S.B.: *Pharmacognosy*, Nirali Prakashan, Pune, India (1997).
[10]. Hegde Karunkar and Joshi Arun B: *Scholars Research Library De Pharmacia lettre* 2(3): 255 (2010). [11] C.I. Kewuchi Jude, C.I Kewuchi Catherine and M. Igbo Ngozi: Chemical profile of *Tridax procumbens* Linn, *Pakistan Journal of Nutrition* 8:548-550, (2009).
[11]. M.P. Ayyappadas, R. Dhanabalan, A. Doss and M. Palani Swamy: Phytochemical screening and Antibacterial Activity of aqueous and Methanolic extract of two medicinal plants against Bovine Mastitis Bacterial Pathogens. *Ethnobotanical leaflets* 13:131-139 (2009).
[12]. R. Dhanabalan, A. Doss, M. Jagadeeswari, S. Balachander, E. Kezia, V. Parivuguna, C.M. Reena Josephine, R. Vaidheki and K. Kalamani: In vitro Phytochemical Screening and Antibacterial Activity of Aqueous and

- Methanolic Leaf Extracts of *Tridax procumbens* against Bovine Mastitis Isolated *Staphylococcus aureus*, *Ethnobotanical Leaflets* 12: 1090-95, (2008).
- [13]. Petchi, R.R., Vijaya, C. and Parasuraman, S. (2013) Anti-Arthritic Activity of Ethanolic Extract of *Tridax procumbens* (Linn.) in Sprague Dawley Rats. *Pharmacognosy Research*, 5, 113-117.
- [14]. Bhagwat, D.A., Suresh, K.G. and Rahul, A.S. (2008) Anti-Diabetic Activity of Leaf Extract of *Tridax procumbens*. *International Journal of Green Pharmacy*, 2, 126-128.
- [15]. Ikewuchi, J.C. (2011) Alteration of Plasma Biochemical, Haematological and Ocular Oxidative Indices of Alloxan Induced Diabetic Rats by Aqueous Extract of *Tridax procumbens* Linn (Asteraceae). *EXCLI Journal*, 11, 291-308.
- [16]. Pareek, H., Sharma, S., Khajja, B.S., Jain, K. and Jain, G.C. (2008) Evaluation of Hypoglycaemic and Anti-Hyperglycaemic Potential of *Tridax procumbens* (Linn.). *BMC Complementary and Alternative Medicine*, 9, 48.
- [17]. Ikewuchi, J.C., Onyeike, E.N., Uwakwe, A.A. and Ikewuchi, C.C. (2011) Effect of Aqueous Extract of the Leaves of *Tridax procumbens* Linn on Blood Pressure Components and Pulse Rates of Sub Chronic Salt-Loaded Rats. *Pacific Journal of Science and Technology*, 12, 381-389.
- [18]. Salahdeen, H.M., Yemitan, O.K. and Alada, A.R.A. (2004) Effect of Aqueous Leaf Extract of *Tridax procumbens* on Blood Pressure and Heart Rate in Rats. *African Journal Biomedical Research*, 7, 27-29. [20] Ravikumar, V., Shivashangari, K.S. and Devaki, T. (2005) Hepatoprotective Activity of *Tridax procumbens* against Galactosamine/Lipopolysaccharide-Induced Hepatitis in Rats. *Journal of Ethnopharmacology*, 101, 55-60.