Review

REVIEW ON *TRIDAX PROCUMBENS (L.)* AND ITS MARKETED PRODUCT

[1]Anurag Kumar*, [2]Dharam Veer Singh, [3]Niranjan Sutar,[3]Uma Shankar Sharma,[3]Ranju Sutar.
[1]Dayanand Dinanath College, Institute of Pharmacy, Kanpur 209214, U.P.
[2]Nandini Nagar Mahavidyalaya College of Pharmacy, Nawabganj, Gonda-271303, U.P
[3]PG Department of Pharmacognosy, Sir Madanlal Institute of Pharmacy-206001, U.P

Submitted on: 19.06.2014 Revised On: 07.08.2014 Accepted on: 10.08.2014

ABSTRACT:
Objectives: To review the phytoconstituents and marketed product of *Tridax procumbens* (L.). **Materials and Methods:** The information was collected and compiled from scientific literature present in different databases viz., Science Direct, PubMed, Elsevier and Google Scholar.
Results: Literature search revealed that weeds possess diverse group of phytoconstiuents such as phenolics, flavonoids, alkaloids, terpenes, steroids, saponins etc. Weeds have been used for their therapeutic values in Ayurveda and Unani systems of medicine. The phytoconstituents present in them are responsible for the biological activities.
onclusion: Natural products of plant origin have been used for the treatment of various infectious and degenerative diseases. The diversity of phytochemicals present in plants provides drug leads for the development of novel therapeutic agents.

KEY WORDS: *Tridax procumbens* (L.), pharmacological study, pharmacognostical study.

Corresponding Author: Anurag Kumar
Mail: niranjansutar77@rediffmail.com,
M-9760085338

Indian Research Journal of Pharmacy and Science; 2(2014) 17-22;
Journal home page: https://www.irjps.in

INTRODUCTION

Herbal Medicine sometimes referred to as Herbalism or Botanical medicine is the use of herbs for their therapeutic or medicinal value. Many familiar medications of the twenty century were developed from ancient healing traditions that treated health problems with specific plants. Folk medicine is significant source of Ayurvedic, Unani, Traditional Chinese Medicine and Medical herbalism. It incorporates crude medicinal herbs, decoctions and infusions and syrups. Folk medicine is still practiced by some vendors, hakims and vaids in remote areas and some folk preparations are of surprising high curative value. The WHO estimates that up to 80% of the world's population use traditional medicines as their primary form of healthcare. The use of herbal medicine, the dominant form of medicinal treatment in developing countries, has been increasing in developed countries in recent years. WHO notes that of 119 plants derived pharmaceuticals medicines, about 74% are used in modern medicine in ways that correlated directly with their traditional uses as plant medicines by native cultures, Major pharmaceutical companies are currently conducting extensive research on plant materials gathered from the rain forests and other places for their potential medicinal value[1].

Tridax procumbens Linn. (*Tridax*) family Compositae commonly known as 'Ghamra' and in English popularly called 'coat buttons' because of appearance of flowers has been extensively used in Ayurvadic system of medicine for various ailments and is dispensed for "Bhringraj" by some of the practitioners of Ayurveda which is well known medicine for liver disorders [2]. The plant is native of tropical America and naturalized in tropical Africa, Asia, Australia and India. It is a wild herb distributed throughout India. Coat buttons is also found along roadsides, waste grounds, dikes, railroads, riverbanks, meadows, and dunes. Its widespread distribution and importance as a weed are due to its spreading stems and abundant seed production [3]. *Trida* is a week straggling herb about 12-24cm long with few leaves 6-8cm long and very long slender solitary peduncles a foot long and more. Leaf is simple, opposite, exstipulate, ovate, acute, inflorescence capitulum. *Tridax* has two types of flowers ray-florets and disk-florets, Basal placentation, fruit is cypsela [4].

CLASSIFICATION:

The Plant classification details are: [5]

Kingdom: Plantae-Plants
Subkingdom: Tracheobionta-Seed plants
Division: Magnoliophyta-Flowering plants
Class: Magnoliopsida- Dicotyledons
Subclass: Asteridae
Order: Asterales
Family: Asteraceae- Aster family
Genus: *Tridax L.* - tridax
Spieces: *Tridax procumbens (L.)*- coat buttons

VERNACULAR NAMES [5]

English -Coat Buttons and Tridax Daisy.
Hindi- Ghamra
Sanskrit- Jayanti Veda
Oriya - Bishalya Karani
Marathi - Dagadi Pala
Telugu- Gaddi Chemanthi
Tamil- Thata poodu
Malayalam- Chiravanak
Spanish -Cadillp Chisaca
French - Herbe Caille
Chinese - Kotobukigiku
Latin -*Tridax procumbens (Linn.)*

MORPHOLOGICAL FEATURES:

Tridax procumbens L. is a small perennial herb having short, hairy blade like leaves. Corolla is yellow in colour. It is a common weed grows in open places, coarse textured soils of tropical regions, sunny dry localities, fields, waste areas, meadows and dunes. It is a semi prostate, annual, creeper herb.

Stem is ascending 30-50cm height, branched, sparsely hairy, rooting at nodes.

Leaves are simple, opposite, exstipulate, lanceolate to ovate. 3-7 cm long irregularly toothed margin, base wedge shaped, shortly petioled, hairy on both surfaces.

Flowers are tubular, yellow with hairs, inflorescence capitulum. Tridax has two types of flower: ray florets and disc florets with basal palcentation.[6] Flowering-Fruiting throughout the year.

Fruit is a hard achene covered with stiff hairs and having a feathery, plume like white pappus at one end. The plant is invasive in part because it produces so many achenes and each achene can catch the wind in its pappus and be carried some distance. Calyx is represented by scales or reduced to pappus.

Seed have pendulous embryo, endosperm is absent.

PARTS USED:

Whole Plant (Leaf, stem and flowers) is used to cure different ailments

CHEMICAL CONSTITUENTS:

*Tridax procumbens*can serve as a good source of plant protein and potassium supplement, as well as being potential source of provitamin A (carotenoids) to thepopulation. The leaves of ***Tridax Procumben***sare cooked as a vegetable; they are also eaten by

cattle. ***Tridax Procumben***s leaves contain various alkaloids, flavonoids, carotenoids, seasonings, β-Sitosterol, fumaric acid and tannin etc[7]

. The flowers contain luteolin, glucoluteolin, quercetin and isoquercetin, oxoesters etc. Presence of lauric, myristic, palmitic, stearic, arachidic, benenic, palmitoloic, linoleic and linolenic acid is also reported in the aerial parts except flowers tops. Two water soluble polysaccharide; WSTP-IA and WSTP- IB containing a Beta-(1-->6)-Dgalactoanmain chain have been purified from the leaves of the plant. The calyx of Tridax procumbenswas found to contain galactose specific lectin. A new flavonoid (procumbenetin), isolated from the aerial parts of Tridaxprocumbens, has been characterized as 3, 6-dimethoxy-5, 7, 2', 3', 4'-pentahydroxyflavone 7-0-β—glucopyranoside 1 on the basis of Spectroscopic techniques and by chemical means[8]

A new flavones Glycoside:5,7,4'-Trihydroxy-6,3'-Dimethoxy Flavones 5-0-LRhamnopyranoside also found in the leaves of Tridax procumbens. The ethylacetate soluble part of hexane extract of Tridax procumbens yielded a new Bisbithiophene named tridbis bithiophene along with four known terpenoids i.e. Taraxasteryl acetate,β-amyrenone, Lupeol and Oleanolic acid, which have never been reported so far from this plant[9]

MARKETED PRODUCTS:

Mira Hair Oil is Ayurveda hair oil which accelerates hair growth faster than any other product on the market, it is referred to as a miraculous hair product by many and is 100% natural and organic, packed full of special Ayurveda herbs and oils. The scent of Mira Hair Oil is a natural flowery and refreshing sweet scent. It is transparent in colour, and according to Mira Herbals there simply is nothing quite likes it out there.

Mira Hair Oil - Where Does It Come From:

Mira Hair Oil was once a rare and ancient beauty secret used only by the South Brahmi women in India who have long beautiful hair, and who were nominated into the Guiness Book of World Records (1998) because of it. Today, their formula, though produced on a much larger scale is what Mira Hair Oil is based on. It is unchanged and is all natural, infused with many Ayurveda ingredients, and is just as powerful today as it has always been.

It is 100% organic and natural which stops and prevents hair loss as well as stimulate new hair growth - without the harmful side effects of other products on the market.

Ingredients/Action

Mira Hair Oil consists of 17 ingredients, all of which are perfectly natural:
Henna, Aloe vera, Eclipta alba, Hibiscus, Amla, Coconut oil, *Tridax Procumben*s (coat bottons), Cuscuta reflexa, Asiasari Radix, Sophora flavescens, Ocimum gratissimum, Ginkgo biloba, Rosmarinus officinalis, Thuja occidentalis leaf, Citrullus colocynthis, Trigonella (Fenugreek), Grape seed oil.

The combined oils seep naturally and safely into the scalp, where they stop DHT production, detoxify blood, exfoliate pores, nourish and condition hair.

Side Effects

Unless users happen to suffer from a rare, never before heard of allergy, there are no known Mira Hair Oil side effects. Despite prolonged research and wading through hundreds of Mira Hair Oil user reviews, not one instance of negative reactions was found. It appears that the ingredients of this oil treatment really are perfectly safe for just about every individual under the sun.

Mira Hair Oil,

There are many benefits associated with this hair oil:

Faster Hair Growth
Thicker Hair
Shiny and Tangle Free Hair
Prevention of Dandruff
Stops Hair loss
Eliminates Itchy Scalp and Treats Psoriasis
Prevents Greying Hair

Example of marketed product-

CAP CONE OINTMENT
CAP CONE TABLETS
CAP CONE PESTS

Ingredients/Action

Mira Hair Oil consists of 17 ingredients, all of which are perfectly natural:
Henna, Aloe vera, Eclipta alba, Hibiscus, Amla, Coconut oil, *Tridax Procumben*s (coat bottons), Cuscuta reflexa, Asiasari Radix, Sophora flavescens, Ocimum gratissimum, Ginkgo biloba, Rosmarinus officinalis, Thuja occidentalis leaf, Citrullus colocynthis, Trigonella (Fenugreek), Grape seed oil.

The combined oils seep naturally and safely into the scalp, where they stop DHT production, detoxify blood, exfoliate pores, nourish and condition hair.

Faster Hair Growth Thicker Hair Shiny and Tangle Free Hair Prevention of Dandruff Stops Hair loss Eliminates Itchy Scalp and Treats Psoriasis Prevents Greying Hair

"Having spent the last couple of years trying to recover from chemical burns to my scalp and hair, I needed help and Mira Hair Oil proved the solution. Tired of trying to put hair extensions into my short, lifeless hair, I searched the internet for a way of growing my hair faster. Mira Hair Oil claimed to grow hair at 2 - 3 inches per month (normally half to one inch a month),

to help prevent greying hair, treat psoriasis and thicken balding hair for men and women.

SIDE EFFECTS:

Unless users happen to suffer from a rare, never before heard of allergy, there are no known Mira Hair Oil side effects. Despite prolonged research and wading through hundreds of Mira Hair Oil user reviews, not one instance of negative reactions was found. It appears that the ingredients of this oil treatment really are perfectly safe for just about every individual under the sun.

The invention provides a novel herbal formulation useful for the treatment of skin disorders and comprising two or more plant extracts selected from *Tagetes erecta*, *Moringa oleifera*, *Ocimum sanctum*, *Tridax Procumben*s, *Aloe vera*, and Gum olibanum together with conventional additives.

The present invention relates to a herbal formulation useful for treatment of skin disorders like dry eczema and corns on the feet and for alleviating muscular pain due to exertion. The herbs that are used in this invention are known to possess activity against eczema and corn and they also possess analgesic property

Eczema is a generic term for acute or chronic inflammatory condition of the skin, typically erythematous, edematous, papular, vascular and crusting followed by lichenification and scaling and occasionally by duskiness of erythema infrequently by hyper pigmentation, often accompanied by sensation of itching and burning. It is also called as dry tetter. Dermatitis is eczematous unless specifically stated to the contrary. The earliest sign of eczema is erythema, occasioned by dilatation of dermal blood vessels, and this persists to a greater or lesser degree until healing takes place. The next stage consists of invasion of epidermis by lymphocytes and an increase in
its cellular and intercellular fluid. The latter collects in to minute vesicles. The vesicles soon rupture, leading to exudation of serum onto the surface, which after some time dry up and form crusts. As a result of these changes, the normal function of epidermis is interfered with. It: fails to form healthy horn cells, the surface of the skin becoming scaly (parakeratosis). Also, the cellular division may be increased leading to general thickening of the epidermis which when extreme, results in “lichenification”

INGRIDENT

1.

Gum olibanum resinoid - 3-6%
(n-Hexane extract)
Tridax Procumbens leaf extract - 3-6%
Tagetes Erecta leaf extract - 1-3.5%
Emulsifying ointment - 33-42%
Methyl paraben - 0.1-0.2%
Propyl paraben - 0.1-0.2%
Purified Water q.s. - 100%

2.

Gum olibanum powder : 3-6%
Tridax Procumbens leaf extract : 3-6%
Aloe vera : 3-6.5%
Tagetes erecta leaf extract : 1.5-4.5%
Emulsifying ointment : 28-37%
P-chlorocresol : 0.1-0.2%
Purified water q.s : 100%

Procedure of capcone ointment / TAB products:

The naturally occurring Gum Olibanum exudate in dry state is taken as it is. The lumps (1 kg) were powdered in an edge runner for 30 minutes. The powdered raw gum was passed through 100-mesh screen.

The leaves of *Tridax Procumben*s were shade dried for 48 hrs at room temperature. The crushed leaves (500 gms) were then soaked with water (1 liter) for 72 hrs at room temperature. At the end of this period, water is decanted and then concentrated to 100 ml by evaporating under vacuum at room temperature. This concentrated solution is then lyophilised to obtain powder.

The tender leaves of Tagetes Erecta were shade dried for 48 hrs at ambient temperature. The leaves (500 gms) were soaked with water (1 lt.) for 72 hrs at room temperature. As end of this period, water is decanted and then concentrated to 100 ml by evaporating under vacuum at room temperature. This concentrated solution is then lyophilized to obtain powder.Weight quantities of p-chlorocresol and emulsifying ointment are taken in container and mixture heated until both the mixture melts (oil phase). Gum Olibanum powder, *Tridax Procumben*s leaf extract, dried juice of Aloe Vera and water
extract of Tagetes Erecta are dispersed in water in a suitable container and mixture is kept for homogenization until a homogenous dispersion is obtained. This dispersion (aqueous phase) is heated for the same temperature as that of oil phase. The aqueous dispersion is added to the oil phase containing resinoid and emulsifying ointment in hot condition while under stirring for 1 hr at 10,000 rpm until a cream consistency is obtained.

This formulation is useful for alleviating muscular pains and also acts as skin conditioner.

Therapeutic properties-

The cardiovascular effect of aqueous extract obtained from the leaf of *Tridax procumbens* Linn.
was investigated on anaesthetized *Sprague-Dawley* rat. The aqueous extract has ability to cause
significant dose dependant decreases in the mean arterial blood pressure. The higher dose leads
to significant reduction in heart rate where as lower dose did not cause any changes in the same.
The leaves of *Tridax procumbens* Linn. shows hypotensive effect [10].
In other study, essential oils were extracted by steam distillation from leaves *Tridax procumbens*
Linn. and they were examined for its topical repellency effects against malerial parasite *Anopheles stephensi* in mosquito cages. All essential oils were exhibits relatively high repellency effect. Thus these plants are promising as repellents[11].
Tridax procumbens Linn. was also reported for its anti inflammatory and anti oxidant activity[12].
Leaves of *Tridax* were good hair growth promoters and have ability to prevent falling of hairs[13],
. This plant was also used as a good bioadsorbent for the removal of highly toxic ions of Cr (VI) from industrial wastewater. Hence *Tridax procumbens* Linn. recommended for bioremediation [14]. This plant was also used for bronchial catarrh, dysentery, diarrhoea and in the West Africa and for a remedy against conjunctivitis [15, 16].

Mira Hair Oil

ACKNOWLEDGEMENT

The authors are thankful to Mr. Vivek Yadav, Chairman, and Dr U S Sharma, Director, Sir Madanlal Group of Institutions, Etawah (UP) for providing necessary facilities and cooperation during this research work.

CONCLUSION

The field of the herbal drugs and formulations is very vast and there is still lot to explore on the subject of standardization of these. So, while developing an herbal drug formulation it is must to have all the related knowledge of that particular drug including all its organoleptic characters to phytoconstituents to pharmacological action to its standardization in respect to various parameters via various techniques.
Monographs as compiled in the standard books like Indian Pharmacopoeia, Ayurvedic Pharmacopoeia of India, Wealth of India and Ayurvedic formulary, provide all the details for the various tests to be performed in order to determine the conformity of the crude or formulated herbal drug with the standards lay. It is also important to study the influence of the various factors like effect of the environment, climate, growth conditions and condition of the storage on the potency of a crude drug or the formulation prepared using it as a whole or as extract or the constituent isolated. It is also important to standardize, not only the main drug constituent but also the other excipients and additives incorporated.

REFERENCES

1. Honda,. S.S., and Kapoor. V.K., Pharmacognosy, 2nd edition, Vallabh Prakashan, Educational Publishers, Delhi, 1989, 213.
2. Bhagwat. D.A., Killedar. S.G., and Adnaik. R.S., Antidiabetic activity of leaf extract of Tridax procumbens. International Journal of Green Pharma, 2008, 2**,** 126- 128.
3. Chauhan. B.S., and Germination. D.E., Ecology of Two Troublesome Asteraceae Species of Rainfed Rice: Siam Weed (*Chromolaena odorata*) and Coat Buttons (*Tridax procumbens*) Johnson Weed Science 2008, 56, 567–573.
4. Khan. S.K., Rahman. A.H.M.M., Alam.M.S., A. Ferdous., Rafiu.l A.K.M.I., and Rahman. M. M., Taxonomic Studies on the Family Asteraceae (Compositae) of the Rajshahi Division. Research Journal of Agriculture and Biological Sciences, 2008, 4(2), 134-140.
5. en.wikipedia.org.
6. Khan. S.K., Rahman. A.H.M.M., Alam. M.S., Ahmed. F., Islam. A.K.M., Rafiul. A.K.M., and Rahman. M. Matiur., Taxonomic Studies on the Family Asteraceae (Compositae) of the Rajshahi Division. Research Journal of Agriculture and Biological Sciences, 2008, 4(2): 134-140.
7. Tiwari. U., Rastogi. B., Singh. P., Saraf. D.K., and Vyas. S.P., Immunomodulatory effects of aqueous extract of Tridax procumbensin experimental animals. J Ethnopharmacol.2004, 92:113–119.

8. Diwan. P.V., Tillo. L.D., Kulkarni.D.R., Influence of Tridax procumbenson wound healing. Ind J Med Res. 1982, 75:460–446.
9. Ravikumar. V., Shivashangari. K.S., and Devaki. T., Hepatoprotective activity of Tridax procumbensagainst d-galactosamine/lipopolysaccharideinduced hepatitis in rats. J Ethnopharmacol.2005, 101:55–60.
10. Salahdeen. H.M., Yemitan. O.K., and Alada.A.R., *African Journal of Biomedical Research*. 2004, 7, 27 – 29.
11. Rajkumar. S., and Jebanesan. A., *Tropical Biomedicine*, 2007; 24(2), 71–75.
12. Nia. R., Paper. DH., Essien. E.E., Oladimeji. O.H., Iyadi. K.C., and Franz. G., *Nigerian journal of physiological science*, **2003**, 18(1-2), 39-43.
13. Saxena. V.K., and Albert. S., *J. Chem. Sci.,* **2005,** 117(3), 263–266.
14. Rathi. V., Rathi. JC., Tamizharasia. S., and Pathak. A.K., *Pharmacognosy Review*, **2008**, 2(3), 185-186.
15. Raina. R., Prawez. S., Verma. P.K., and Pankaj. N.K., Medicinal Plants and their Role in Wound Healing, Vet Scan, **2008**, 3(1), 221-224.
16. Mahato. R.B., and Chaudhary. R.P., *Nepal. Scientific World*, **2005**, 3(3), 26-31.

Conflict of Interest Reported: Nil; Source of Funding: None Reported