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Medicinal Importance of Kantakari [*Solanum Xanthocarpum*]- Review Article

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ABSTRACT

The use of healing herbs for restoration is as old as humanity itself. There's huge evidence that guy and his hunt for herbal treatments have an extended history, which includes written information, surviving monuments, or even the primary plant drug treatments. The expertise of the usage of medicinal plants befell because of guy's long-status battles with disorder, which taught him to look for prescription drugs inside the barks, seeds, fruit our bodies, and different parts of plants. present day pharmacology includes numerous plant-based totally medicines that have been used for hundreds of years and were known to historic cultures. present day technological know-how has diagnosed their lively effect. Kantakari, also referred to as Yellow Berried Nightshade, is a medicinal plant this is often determined in India's arid regions. This plant, that's a member of the Solanaceae own family, has a number of pharmacological and phytochemical trends. studies and studies performed over the years have revealed that the plant's medicinal advantage includes anti inflammatory, bronchodilator, anti-microbial, wound-restoration, anti-most cancers, and insecticidal houses. The evaluation that follows presents a vital evaluation of the prevailing literature even as integrating info on Kantakari, which includes a point out of its botanical description, chemical composition, and Ayurvedic medication packages.

Keywords: Medicinal plants, Kantakari, Solanaceae, Pharmacological properties, Phytochemical traits, Medicinal benefits.

INTRODUCTION

Ayurveda has thousands of years of expertise as a long-established Indian Medicinal system. nearly 80% of the worldwide population, specially in evolved international locations for number one health care, make use of natural drugs. The medical time period "breathing problems" refers back to the severa styles of infections, hypersensitive reactions, and other problems that have an effect on the exceptional organs, tissues and specialized cells of the human breathing system. breathing system problems have an effect on millions of humans global. the selection of an in depth and coordinated method to the organic assessment of plant merchandise paperwork the basis for the manufacturing of latest plant capsules. Kantakari is one of the maximum extensively used drugs in Ayurveda, referred to as dashamoola. literally, Dashamoola method combining ten plant roots together. Dasamoola is an powerful compound formula of Ayurveda and has been recommended for severa sicknesses with fantastic consequences [1]. Dashamoola consists of the roots of five large trees (Brihatpanchamoola) and the roots of five small herbs (Laghupanchamoola). Kantakari is extensively used to deal with breathing sicknesses in Ayurveda [2]. it is specially used for the treatment of kasa, shwasajwara, Hikka, Angamarda, and many others. This plant changed into categorised with the aid of Ayurvedic classics underneath Kasahara, Sotha hara, Hikkanigrahana, Kanthya, Angamardaprasamana, Sheetaprasamana Dashemaanis [three]. Kantakari is used as an single medication and also as an factor in multiple compound arrangements for exceptional sicknesses. i. e. Kantakari Avaleha, Vyaghri Haritaki Avaleha, Ajamamsa Rasayana, Khadiradi Gutika and many others.

DESCRIPTION OF THE PLANT :-

Latin Name :- *Solanum xanthocarpum* Schrad. & Wendl

Family:- Solanaceae

Synonyms :- *Solanum virginianum*, *Solanum surettense* Burm.

Sanskrit names :- Kantakari, Duhsparsa, Vyaghri, Kshudra, Nidigdhika, Kantakarika, Dhavani, Kantalika

Geographical Source :- It is available in India, growing to 2,200 m in the Himalaya, mainly as a weed on roadsides and wastelands in dry areas .



Plant of Kantakari

Morphology:

Solanum xanthocarpum is a very prickly perennial herb approximately 1.2 m tall, commonly with an woody base; densely branched stem; more youthful ones commonly stay clothed with thick, stellate and tomentose hairs; immediately, glabrous and brilliant compact prickles, once in a while 1 to 3 cm lengthy; ovate or elliptic leaves, sinuous or subpinnatifid, obtuse or subacute, stellate on each facets of the leaves, vegetation red in shade, small, with lateral chymes . The unripe berries, with white lines and globular berries, are green in shade and flip yellow whilst rips. smooth, compact, reniform seeds; bitter-flavor.

Chemical Constituents:-

The plant includes alkaloids, sterols, saponins, glycosides and flavanoids, in addition to carbohydrates, fatty acids, amino acids, etc. The number one alkaloid is the steroidal alkaloid solasodine. Solasonine, solasodine, solamargine, betasolamargine, solanocarpine, and solanocarpidine are present in fruits. There are traces of isochlorogenic, neochlorogenic, chlorogenic and caffeic acids in dried fruits. Apigenin yielded petals. Quercetin diglycoside and sitosterol is brought by way of Stamens. Coumarins, scopolin, scopoletin, esculetin and esculetin are found in the plant parts of *S. xanthocarpum*. In plant species, fruits have greater alkaloids than other organs, and alkaloid productiveness varies with numerous organic solvents. further to the alkaloid cloth, apart from the presence of tolerable amounts of heavy metals inclusive of Cu, Fe, Pb, Cd and Zn, the presence of flavanoids and saponin became additionally determined .

Rasa	Katu, Tikta
Guna	Laghu, Ruksha, Teekshna
Virya	Ushna
Vipaka	Katu
Parts Used	Whole Plant
Karma	Vedanasthapana, Shothahara, swedajanana, Jwaraghna
Effect on Tridosha	Balances Kapha & Vata, it increases Pitta Dosha
Doses	50 ml as decoction

Pharmacological Actions:

Antiasthmatic Action:

Bronchial asthma is the most everyday debilitating situation of many breathing disorders affecting guys. Bronchial asthma is a critical global fitness trouble. 5% to ten% of people of every age suffer from this continual airway sickness. it's miles a airway inflammatory situation with several obstructions of the airway, irritation and bronchial hyper-reactivity. healing impact of *Solanum xanthocarpum* Schrad & Wendl ethanolic extract is evaluated i.e. asthma-relieving or antihistaminic, antiallergic property, is measured. *Solanum xanthocarpum* is generally used to deal with breathing disorders by practitioners of the Siddha system of drugs in southern India. because of this, a powder or a decoction of a whole dried plant is used. In patients with moderate to intense asthma, *Solanum xanthocarpum* has extended pulmonary function to a sizeable volume. It became advised that alleviation from the bronchial asthma signs and symptoms produced by *Solanum xanthocarpum* Schrad and Wendl can be because of a bronchodilator impact, decreased bronchial mucosal edema, reduced secretions inside the lumen of the airway .

Anti- Inflammatory Action:

With a view to discover the anti-inflammatory interest of tomatidine and solasodine, the LPS-inspired macrophage changed into used as a irritation version, wherein tomatidine changed into determined to have an stronger anti-inflammatory effect than solasodine at the tested concentration. Ear irritation caused by many programs of tetradecanoyl-phorbol 13-acetate changed into significantly decreased via topical administration of solasodine. In acute and continual inflammatory animal models, solasodine remoted from *Solanum trilobatum* has been tested for anti-inflammatory movement.

Antibacterial Action

Solanum xanthocarpum methanolic and acetone leaf extracts have been very powerful in inhibiting the increase of *Staphylococcus aureus*, a giant human pathogen causing wound infections. The presence of alkaloids, phenolics and flavanoids in its leaves are capacity explanations for the antibacterial action of *Solanum xanthocarpum*.

Anti-Fertility Action

Antispermatic interest is found in Solasodine, an alkaloid of *Solanum xanthocarpum*. persistent management of solasodine (20 mg/kg each different day orally for 60 days) made male rats and dogs infertile within the Dixit vice chairman 1980 record. In rats, the mating take a look at found out 87 percent infertility, which returned to ordinary after 60 days of drug-feeding cessation. Solasodine is well absorbed, inhibiting the motility of sperm & spermatogenesis. Solasodine can be formulated as an plant-beginning male.

Antifungal Action

The antifungal pastime of *Solanum xanthocarpum* (Kantakari) against *Aspergillus niger* and *Candida albicans* became documented on the basis of the Agar well approach of diffusion in PDA media and boom inhibition in PDB media with Distil water and *Solanum xanthocarpum* leaf Hexanic extract.

Hypoglycemic Activity:

The aqueous extract of *Solanum xanthocarpum* confirmed a main hypoglycemic impact inside the one hundred and two hundred mg/kg doses of everyday and streptozotocin-brought on diabetic rats. The hobby shown by using the aqueous extract turned into comparable to that of the standard glibenclamide oral hypoglycemic agent. The experimental findings found out that each everyday and streptozotocin-brought on diabetic rats expressed a mighty blood glucose lowering property. It turned into determined that the extract's LD50 turned into excessive, suggesting a excessive protection margin.

Anthelmintic Activity:

Anthelmintic behavior of the fruity extract of *Solanum xanthocarpum* is pronounced after the evaluation. In diverse fields of pest management, the plant *Solanum xanthocarpum* has been used.

DISCUSSION

Natural medicines are gaining recognition due to their green and useful homes. Kantakari is regarded as a valuable plant because of its numerous medicinal packages. Kantakari is used in treating kasa, shwasa, jwara, swarabheda, Karnamoolasotha, Gulma, kushta, shophya, Hrdroga, and so forth. inside the remedy of catarrhal fever, cough, asthma and chest ache, roots are used as expectorant and diuretic and seeds are beneficial as expectorant in cough and asthma. It was said in a scientific trial that the oral administration of *Solanum xanthocarpum* At a dosage of 300 mg of dry powder thrice an afternoon for 3 days, located to be very effective in dealing with slight to intense bronchial asthma and its bioactivity is same to that of 200 mg of deriphylline. Solasodine is used for the production of steroidal pills in pharmaceutical industries.

CONCLUSION

Kantakari is one of the vital drug blanketed underneath Dashamoola. it is non-poisonous and secure for human consumption and is taken into consideration a treasured plant for its flexible medicinal applications in each Ayurvedic and current drug manufacturing fields. Kantakari may be used as a unmarried drug and also as a ingredient in special compound formulations for diverse diseases such as kasa, shwasa, jwara, swarabheda, Karnamoolasotha, Gulma, kushta, shophya, Hrdroga, and so forth. There are lots of formulations containing kantakari as a ingredient in special dosage sorts. it is used in the shape of swarasa (fresh juice) as a unmarried agent and as a decoction for the remedy of shwasa. This plant is being studied extensively for its hepatoprotective, hypoglycemic, anti-asthmatic, anti-microbial, and severa other pharmacological properties. extra research on other phytochemical compounds may lead to the improvement of a novel approach for extra therapeutic utility.

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