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Research Article

**PHYTHO CHEMICAL CONSTITUENTS AND THEIR
BIOLOGICAL ASPECTS OF SENNA AURICULATA****Dr. Vustelamuri Padmavathi**Assistant Professor in Chemistry, Neil Gogte Institute of Technology, Kachavanisingaram,
Uppal, Hyderabad-500088, Telangana, padma1202@gmail.com**Abstract:**

*In our tradition, natural medicines are believed to strengthen the inner immune system of the human body without adverse effects. Hence, herbal drugs are believed to act more effectively than modern medicines. We selected S.auriculata because of its high medicinal value in traditional Indian systems of medicine, such as Ayurveda and Siddha. It is a legume tree belongs to the family fabaceae . It is commonly known by its native names **matura tea tree, ranawara or avaram**, (Kannada (avarike), Telugu(tamgeḍu.) Tamil (avarai) or the English version **avaram senna**.The Cassia auriculata (Tangedu) is Telangana state flower, which has huge traditional uses beside numerous diseases. It is also used for the treatment of fever, urinary tract disorders, rheumatism, conjunctivitis, ulcers and liver disease. This plant is said to contain a cardiac glucoside (sennapicrin) and sap, leaves and bark to yield anthraquinones, tannins. The root is used in decoctions against fevers, diabetes, diseases of urinary system and constipation. The leaves have laxative properties. The dried flowers and flower buds are used as a substitute for tea in case of diabetes patients. It is also believed to improve the complexion in women. The powdered seed is also applied to the eye, in case of chronic purulent conjunctivitis. In Africa the bark and seeds are said to give relief in rheumatism, eye diseases, gonorrhea, diabetes and gout. Unripe fruit are used for treatment, especially in Ayurveda and Siddha medicine.*

Key Words: *Senna auriculata, Phyto chemical constituents, biological aspects.***Corresponding Author:****Dr. Vustelamuri Padmavathi**Assistant Professor in Chemistry,
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INTRODUCTION:

Plants produce a wide variety of phytochemical constituents, which are secondary metabolites and are used either directly or indirectly in the pharmaceutical industry. For centuries, man has effectively used various components of plant extracts from the treatment of many diseases, including bacterial infections. In the present study reveals the presence of phyto chemicals and their biological activities of *Senna auriculata*. Plants are considered not only as dietary supplement to living organisms but also traditionally used for treating many health problems and the medicinal value of many plants still remains unexplored investigations in to plants are carried out to find novel drugs or templates for the development of new therapeutic agents [1,2]. Over 60% of the world human population, 80% in developing countries depends directly on plants for their medicinal purposes. Plant parts used for the treatment of diabetes, rheumatism, asthma, and skin diseases in the Ayurvedic system of traditional Indian medicine [3-7].

PLANT HISTORY:

Senna auriculata (L.) Roxb.

Synonyms: *Cassia auriculata* L., *Cassia densistipulata* Burmese : Peikthingat

Chinese : Er ye jue ming.

English : Avaram senna, Matara tea, Styptic weed,

Tanners'cassia, Tarwar (India).

French : Avaram.

Hindi : Tarwar.

Portuguese : Avul .

Sanskrit: Aaavartaki, Aaadaari

Unani: Tarwar

Tamil : Avarai, Avaram,

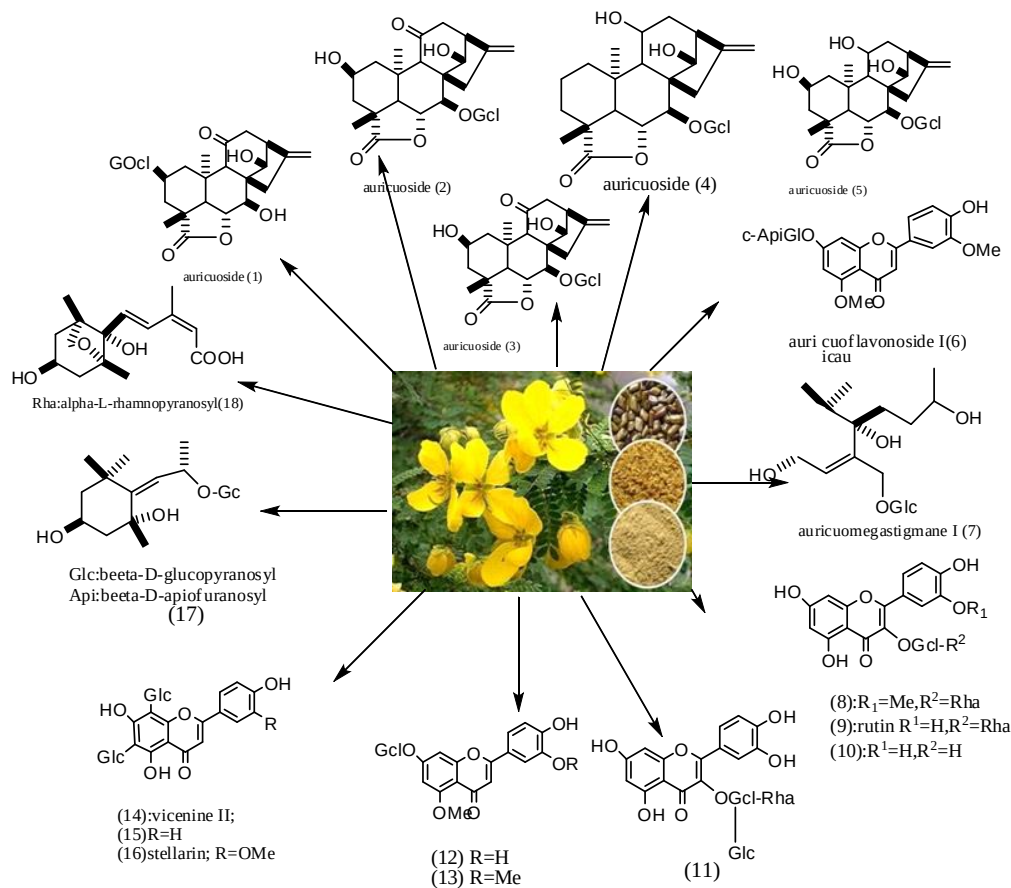
Telugu : Tangedu,

TREADITIONAL USESE:

Senna auriculata is a multipurpose plant. The bark can be used for tanning heavy hides and goat and sheep skins, giving a buff-coloured leather of good quality, which tends to darken to black-red on exposure to light. To prevent this darkening the leather is often finished by a tannage using myrobalans from *Terminalia chebula* Retz. In

southern India the flowers are used as a fast yellow dye for leather. In Gujarat the flower buds are used in the galling process prior to dyeing cotton cloth and chintzes red, pink or purple with madder roots (*Rubia cordifolia* L.). Boiled seeds are an important ingredient in indigo vats, where specific bacterial fermentation ensures the reduction of insoluble indigo into the soluble leuco-indigo, allowing textile fibers to be impregnated by the dye solution. The seeds of *Senna auriculata* serve as a source of sugars to keep the fermentation process going.

Branches are used as chewing sticks and toothbrushes. The bark fiber can be made into rope, and a fermented mixture of pounded bark and dissolved molasses serves as an alcoholic beverage in some parts of India. *Senna auriculata* does not reach a volume adequate for timber, but sometimes handles of small tools are made from the wood. It is used for revegetating erodible soils and as a green manure, and has also proved very effective in reclaiming sodic soils which have been dressed with gypsum. The leaves are sometimes used to make tea, dried flowers serve as a coffee substitute, and in times of food scarcity the young tender pods, young leaves and flowers are eaten as a vegetable. The quantity eaten is critical since *Senna auriculata* is considered not well suited as fodder for goats and cattle because of the poisonous substances in the plant. The stem bark is used in India to stupefy fish. Uses in traditional medicine are numerous. The roots and bark are astringent and are used for gargles, as an alternative, and to cure skin diseases, eye troubles and rheumatism. A decoction of the flowers and the seeds is recommended for diabetes, seeds are used to cure eye diseases, gonorrhea and gout. In Tanzania the plant is used to treat impotence, which may be related to diabetes. Leaves and fruits serve as an anthelmintic and diuretic. Sometimes *Senna auriculata* is cultivated as an ornamental. A most curious use of *Senna auriculata* is reported from India. It is believed that branches were formerly used in the fabrication of wootz Damascus steel. They were added to the crucible and heated with the ore to obtain the chemical composition that gave the steel its beautiful patterning.

CHEMICAL CONSTITUENTS FROM THE SEEDS OF *SENNA AURICULATA*Fig.1: CHEMICAL CONSTITUENTS FROM THE SEEDS OF *SENNA AURICULATA*

auriculosides I (1), II (2), III (3), IV (4), V (5)⁸, auricuoflavonoside I (6) [8], and a new megastigmane glycoside, auricuomegastigmane I (7) [8], together with isorhamnetin-3-O-rutinoside (8)⁹, rutin (9) [9], quercetin 3-O-b-D-glucopyranoside (10) [9], quercetin 3-O-b-D-glucopyranosyl (1,2) [a-L-rhamnopyranosyl(1,6)]b-D-glucopyranoside (11) [10], 5-methoxyluteolin 7-O-b-D-glucopyranoside (12) [11], 7,4'-dihydroxy-5,3'-dimethoxyflavone 7-O-b-D-glucopyranoside (13)¹², vicienin II (14)¹³, apigenin 6, 8-Cdiglucoside, 19 lucenin II (15) [14], stellarin 2 (16) [15], (3S, 5R, 9S)-megastigma-6, 7-dien-3, 5, 9-triol 9-O-b-D-glucopyranoside (17) [16], 5-[(1R, 3R, 5R, 8S)-3, 8-dihydroxy-1,5-dimethyl-6-

oxabicyclo [3,2,1]oct-8yl]-3-methyl-(2Z,4E)-2,4-pentadienoic acid [17], and adenosine [17].

BIOLOGICAL ACTIVITIES OF *SENNA AURICULATA*:

The plant has been reported to possess Anticancer [18], Antibacterial [19], Bronchorelaxant effect [20], Antidiabetic [21], Anti fungal [22], Choleric effect [23], Antioxidant [24], Antimicrobial [25], Anti-inflammatory [26], Wound healing [27], Anticorrosion activity [28], Anticryptococcus activity [29], Skin infections [30], Antimalarial [31], Antimutagenic [32], Anticancer [33], Antiallergic [34], Antigenotoxic effect [35], Analgesic activity [36], Insecticidal [37] and Hypoprotective [38].

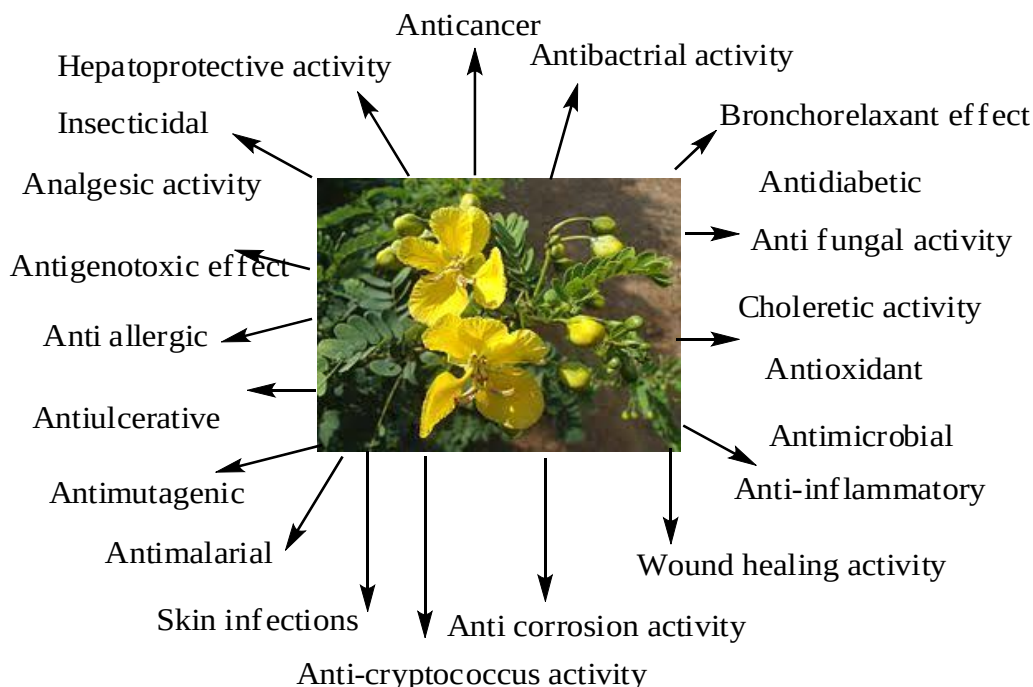


Fig.2 : Biological activities of senna auriculata

CONCLUSION:

Nature has been a powerful source of powerful medicines for thousands of years and number of modern drugs has been extracted and exploited from natural sources, for its use in traditional medicine. Traditional herbal medicines have a long history of use and are generally considered to be safer than synthetic drugs. Over 50% of all modern clinical drugs are natural products that play an important role in drug development in pharmaceutical industries. Basing on this Literature survey senna auriculata seeds and leaves were rich sources of loids,phenols,glycosides,tannins,saponins,proteins,carbohydrates,flavonols,flavanol dimers, fatty acids and anthraquinone, *To the best of our knowledge, there is no report about the Chemical constituents and their biological activities of Senna auriculata Flowers, Leaves, Stem bark and root bark, so our aim and future work on senna auriculata plant parts .Already we have proved that Semicarpus anacardium L.f is a rich source of Essential fatty acids, biflavonoids, bhavanol and triacylglycerides in our laboratory*³⁹⁻⁵⁰.

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