SENNA ALATA (Ringworm Bush) : Description & Pharmacological Activities : A REVIEW

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ABSTRACT : Herbalism has been utilized for healing motive properly before any records have been even created. numerous elements (viz. leaves, seed and roots) of the plant life are recognised for his or her medicinal cost. this text focuses to a average overview of description and pharmacological activities of Senna alata plant. ringworm shrub is a important medicinal herb and an decorative flowering plant. it's dispensed in the tropical and subtropical regions. ringworm bush incorporate numerous chemical substances inclusive of tannins, alkaloids, flavonoids, terpenes, anthraquinone, saponins, phenolics, cannabinoid alkaloids, 1, eight-cineole, caryophyllene, limonene, a-selinene, \betacaryophyllene, germacrene D, cinnamic acid, pyrazol-five-ol, methaqualone, isoquinoline, quinones, reducing sugars, steroids and unstable oils present in numerous components of the plant. Senna alatas has been historically used for treating insect bites, wounds, ringworms, diabetes, malaria, allergies, tinea infections, scabies, blotch, herpes, eczema and as a laxative. It suggests antibacterial, antioxidant, antifungal, dermatophytic, anticancer, hepatoprotective, antilipogenic, antimalarial, anticonvulsant, antidiabetic, antihyperlipidemic, anthelmintic and antiviral activitie. supported numerous studies and research articles this review can also offer the assembled statistics so as to confirm the pharmacological fee of Senna alata species.

KEYWORDS: Ringworm bush , Description, Pharmacology.

INTRODUCTION:

Herbal drug treatments has play essential role in primary health care development the arena fitness employer examine that the 80% of living beings in developing international locations agree with completely on herbal medicines for his or found health discoveries that oneher care. recent third of generally used capsules are acquired from natural supply. natural pills are numberone additionally as safest therapeutic tec hnique. seventy eight% of prescribed drugs in united states of america are primarily based on natural sources. numerous medicinal herbs with numerous interesting pharmacophore are tested and Senna alata is this kind of. ringworm bush or cassia alata maximum usually called Ringworm cassia as a leaves are used for the remedy of ringworm. It also known via various names like candle bush, empress candle plant, seven golden candlesticks, candlestick cassia, candlestick senna, christmas candle, ringworm bush, and so on. ringworm bush is belongs to Leguminosae of Fabaceae own family. This plant is originating from argentina, it's commonly discovered in Asia and Africa. numerous parts of ringworm bush shows one-of-a-kind healing sports. Seeds and leaves of this vegetation have excessive effective as a fungicide and in remedy of eczema. Leaves of senna alatas is hired to treat constipation. constant with the Ayurveda leaves of the senna alata bitter in flavor and it's miles historically used to cure vata, cough and ailment of the skin . ringworm bush include secondary metabolites inclusive of phenolic, anthraquinones, fatty acids, steroids and terpenoids. these indicates diverse pharmalogical sports consist of antimicrobial, antifungal, antidiabetic, antioxidant, antitumor, anticryptococcus, antiinflammatory, ,wound recuperation and as a laxative. The objective of this assessment article is to deliver up to date and supply whole information of the chemical constituent, description and pharmacological activities of the ringworm bush species.



Fig 1: Ringworm bush plant



Fig 2: Ringworm bush Leaves



Fig 3: Ringworm bush Flowers

DESCRIPTION:

Ringworm bush is a decorative flowering erect shrub or small tree in the sub-own family Caesalpinioideae (Gulmohar circle of relatives). it may expand up to three-four m (nine.8-thirteen.1 feet) tall in the tropical and humid area. Branches of ringworm bush flowers are greenish, thick, pubescent inside the arrival. Leaves are 50-80cm lengthy, they'll be closed in the dark. Leaflets are 6-12 pairs, oblong to obovate rectangular, base is rounded to moderately coronary heart-usual, tip is rounded, robust petioles, caduceus bracts. The plants are grouped into dense terminal spike-like, inflorescence looks as if yellow candle. The roots are taproots. The culmination have right away pod like shape, it's up to 25 cm prolonged. it is thick, flattened wings, it seems brown shade whilst ripe with many brown seeds which has diamond like shape. flora of ringworm bush are zygomorphic, having high-quality yellow look. It has 7 stamens with 2 of them are especially longer and a pubertal ovary. The flower buds are half covered with the useful resource of the orange colored wide bract, it is falling down at the time of adulthood. The petals are unequal and obvate. it is propagated by using the usage of seeds which is dispersed by water and animals.

GEOGRAPHICAL

DISTRIBUTION:

Ringworm bush is home to most of the Neotropics and may be determined in one of a kind habitats.Senna alata is an ornamental it's far particularly used for the medicinal purpose in tropical and sub tropical regions of the world. it's broadly dispersed into Brazil, Australia, Egypt, India, Shri Lanka, Ghana and every one spherical in Africa. it's native to the Amazon rainforest. As nearly just like the different Senna species, it is cultivated in tropic location of Asia, Africa, West Indices, Mexico, Australia, South the united states, Islands, Polynesia, Hawaii, Melanesia, and unique elements of India. it's also widely dispersed into Philippines, Thailand, and Indonesia.



Fig 4: Geographical distribution of ringworm bush plant in tropical and humid regions.

TAXONOMICAL

CLASSIFICATION:

Domain	Eukaryota
Kingdom	Plantae
Phylum	Spermatophyta
Subphylum	Angiospermae
Class	Dicotyleonae

Order	Fabales
Family	Fabaceae
Subfamily	Caesalpinioideae
Tribe	Cassieae
Subtribe	Cassiinae
Genus	Senna
Species	ringworm bush

CULTIVATION:

Ringworm bush species has been cultivated as a garden ornamental within the neotropic areas. The plant is speedy and easy growing shrub. ringworm bush is annual growing plant in eight and nine region. healthy specimens produced by way simple propagation strategies offers the stunning floral for you to attracts the butterflies. ringworm bush is belong to bean family and natively determined in tropical and subtropical areas of Africa, Southeast Asia Pacific Island and the usa. The plant of ringworm bush is propagated by way of growing the seeds. Seeds for propagation of ringworm bush collected from 6 inch lengthy seed pods, which contains about 60 seeds each. these seeds are dispersed thru the water or animals. keep the ones pods throughout a dry region over the iciness. Open the pods within the spring and start the cultivation from February via March. If seeds are soaked in warm water in a single day before planting it'll gives the higher end result. Plant the seeds deep about three quarters of an in. in a properly-tired soil and mixture. area of cultivation should be full of with the solar rays.Feed the fertilizer once a month at some stage in season .Watered plant often affords the layer of mulch at some point of the summer months. Mature flora lower back in spring to enhance flowering. All elements of the ringworm bush plant poisonous if swallowed , therefore be stored faraway from kids and pets.

CHEMICAL

CONSTITUENTS:

Phytochemical research are provide the scientific additives and therapeutic potency of a plant. Leaves of ringworm bush contain numerous bioactive compounds. Leaves had been dried and macerated to get methanol extract. Flavones, flavonols, flavonoids glycosides, alatinon, alanonal and β -sitosterol- β -D-glucoside the ones compounds are specially isolated from leaves. chemical substances obtained from ringworm bush seeds are n-hexadecanoic acid, 15-tetracosenoic acid, monounsaturated fatty acid, stearic acid, 2-methyl-1-octanol valeric acid, 2-ethyl-1-decanol and α-D-galactopyranosyl. 1, five, 7-trihydroxy-threemethyl-anthra-quinone are the chemicals received from stem of ringworm bush . a few anthrquinone compounds has recognized in ringworm bush are aloe-emodi, rhein, emodin, chrysophanol. Alkaloid compounds identified from roots of ringworm bush are ω-Alanonal, β -sitosterol- β -d-glucoside, hydroxyemodin, ziganein, apigenin and trans-resveratrol. moreover are the chemicals obtained from ringworm bush flora.



NUTRITIONAL

CONSTITUENTS:

Ringworm bush contains several nutritional constituents. Leaves of ringworm bush including carbohydrates (298.61 \pm 0.40), moisture content (9.53 \pm 0.06), crude lipid (47.73 \pm 0.01), crude fibre (18.23 \pm 0.13) and ash(15.73 \pm 0.03). The nutritional constituents in flowers of ringworm bush are ash (7.00 \pm 1.0), crude protein (13.14 \pm 0.02), carbohydrates (57.04 \pm 0.04), moisture (6.16 \pm 0.14) and crude

lipid(1.81±0.09) ringworm bush also contains several minerals which helps in herbal drug formulation. Those minerals including potassium, iron, manganese, calcium, zinc, copper and chromium.

USES:

- Senna alata is medicinal plant traditionally used for treating skin disease, insect bites, ringworm, tinea infections, scabies, blotch, herpes and eczema.
- It is particularly valued for its laxative effects. The leaves are taken internally as a remedy for constipation and to purify the blood.

It also wont to treat typhoid, diabetes, malaria and asthma.

<u>PHARMACOLOGICAL</u>

Ringworm bush shows various pharmacological activities including antibacterial, antidiabetic, antilipogenic, antifungal, antioxidant, dermatophytic, antihyperlipidemic and anthelmintic.

Antibacterial \triangleright

Ringworm bush shows their antibacterial activity against gram positive(+) as well as gram negative(-) bacteria. The extract of ringworm bush shows significant activities at 512mg/ml due to the some comounds such as flavonoids, quinones, tannins, sterols, alkaloids and sapopins. Methhanolic extract of S.alata are estimated against Staphylococcus aureus, Bacillus subtilis, Bacillus cereus, Pseudomonas aureus, Vibrio mimicus, Salmonella paratyphi, typhoid bacillus .Bioactive compunds like kaempferol,luteolin and aloe emodin estimated against MDR bacteria strain.Anthraquinone and flavonoid glycosides inhibit the expansion of E.coli and S.aureus.The dried leaves processed into herbal soap which shows the antibacterial activities.

Antioxidant \geq

Plants play vital role in protecting cell against oxidative stress which is caused by active free radicals. Some bioactive compounds like ascorbic acid, flavonoids, tocopherol, anthraquinone and carotene are contributed to antioxidant activities. Various parts of ringworm bush are inhibit the action of free radicals which causing oxidative stress. The antioxidant activities is thanks to the polyphenol and flavonoid compounds.

\triangleright Antifungal

Various bioactive compounds which are extracted from ringworm bush display strong in vivo and in vitro antifungal activities. Antifungal activities of varied constituents of Senna alata including alkaloids, 1,8-cineole, limonene, caryophyllene, cinnamic acid, pyrazol-5-ol, flavonol, acid, methaqualone and isoquinoline are explored. Volatile oils extracted from ringworm bush flowers assessed against Candida and Aspergillus species.

Dermatophytic

Ringworm bush is traditionally used for treating various types of skin infections and diseases. Approximately 54 medicinal plants are used for treating scabies, shingles, itching, urticarial, pityriasia versicolor and ringworm. The bioactive compounds like anthranols, anthrones, flavonoids, phenols, tannins and anthracene derivatives are display the dermatophytic activities. Leaves of S.alata shows activities against S.pyogenes, S.aureus, K.pneurnoniae, E.coli, S.rnarcescens, P.cepacia, and P.aeruginosa.

Antimalarial

Malaria is global serious health issues in tropical and subtropical region. Antimalarial activities displayed by quinones which is isolated by S.alata. It shows antiplasmodial activity against Plasmodium falciparum. Terpenes isolated from S.alata leaves also displayed antiplasmodial activity against P. falciparum. activities:

Anthelmintic

Leaf and flowers of ringworm bush used for treating intestinal worm infestation and stomach disorder. The leaves extract inhibits the worms.

Antilipogenic, Antidiabetic Antihyperlipidemic and activities: Leaves and flowers of Ringworm bush are used to regulate lipid absorption, obesity and fat levels in serum . Bioactive compounds like astragalin and kaempferol-3-O-gentiobioside display the antidiabetic activities. ringworm bush leaves is traditionally used for regulation of sugar level in serum.

CONCLUSION:

Study of ringworm bush mainly centered on leaves, stems and flowers while study on seeds and roots are insufficient. Many therapeutic evaluations are examine in cell and animal experiments. Various chemical compounds including anthraquinone, glycosides, naphthopyrone glycoside, phenolic compounds, flavonoids etc. are isolated from ringworm bush. These chemical compounds shows diverse pharmacological activities like antibacterial, antidiabetic, antilipogenic, antifungal, antioxidant, dermatophytic, antihyperlipidemic, anthelmintic and also shows antimalarial activities.

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REFERENCE:

- Ekor M. The growing use of herbal medicines; issues relating to adverse reactions and challenges in Monitoring safety. Frontier of pharmacology, 2013; 4: 1
- 2. Veeresham C.Natural products derived from plants as a source of drugs. Journal of Advanced Pharmaceutical Technological Research.

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- 3. Makinde A.A., Igoli J.O., TA'Ama L., et al. Antimicrobial activity of Cassia alata. African Journal of Biotechnology. 2007;6(13):1509-1510.
- Abo K.A., Fred-Jaiyesimi A. A., Jaiyesimi A. E. A. Ethnobotanical studies of medicinal plants used in the management of diabetes mellitus in South Western Nigeria. Journal of Ethnopharmacology. 2008;115(1):67-71.doi:10.1016/j.jep.2007.09.005.
 Base L.A. Madizingla plants of the merged. Tetange. NJLUSA: Human Parent 1000.
- 5. Ross I. A. Medicinal plants of the world. Totowa, NJ,USA: Human Press : 1999.
- Sule W.F.,Okonkol I. O., Joseph T. A., et al. In vitro antifungal activity of S. alata linn. Crude leaf extract. Research Journal of Biological Science. 2010;5(3):275-284. Doi: 10.3923/rjbsci.2010.275.284.
- 7. Khare C.P.Indian Medicinal Plants: An Illustrated dictionary. London, UK.
- 8. Farnsworth N.R., Bunyapraphatsara N. Thai Medicinl Plants. Recommended fpr Primary Health Care System. Salaya, Thailand: Medicinal Plant Information Center, Faculty of Pharmacy, Mahidol, University; 1992.