

**THE GOLDEN ELIMINATOR:- ARAGVADHA (*CASSIA FISTULA* LINN.)****Harshwardhan Singh Shekhawat<sup>1\*</sup>, Chandan Singh<sup>2</sup>, Manoj Kumar Adlakha<sup>3</sup> and Rajendra Prasad Purvia<sup>4</sup>**<sup>1</sup>M.D Scholar, PG Department of Dravyaguna, PGIA, Jodhpur, Rajasthan.<sup>2</sup>Professor & HOD, PG Department of Dravyaguna, Principal, PGIA, Jodhpur, Rajasthan.<sup>3</sup>Associate Professor, PG Department of Dravyaguna, PGIA, Jodhpur, Rajasthan.<sup>4</sup>Associate Professor, PG Department of Dravyaguna, PGIA Jodhpur, Rajasthan.**\*Corresponding Author: Dr. Harshwardhan Singh Shekhawat**

M.D Scholar, PG Department of Dravyaguna, PGIA, Jodhpur, Rajasthan.

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**ABSTRACT**

Medicinal plants and plant derivate are broadly used in traditional cultures globally and they are becoming progressively popular in contemporary society as ordinary alternatives to synthetic chemicals. Aragvadh[*Cassia fistula* Linn.], commonly known as the Golden shower, also known as Purging Cassia or Indian Laburnum is an significant medicinal plant used in Indian structure of medicine. It is a reasonable to medium sized deciduous tree which is very common in Indian landmass. The fruit pulp comprehends the anthraquinone and rhein. It is often used as a highly active moderate laxative that is safe even for children. It is suggested for the treatment of Jaundice, Gout, Fatty liver, Liver disorders, Bronchitis, Skin diseases. In Ayurvedic medicine and it pacifies the 3 doshas of vaat, pitta and kapha. It exorcises the pitta and kapha from the body. Medicinally it has been numerous pharmacological activities like antifungal, antioxidants, antimicrobial and anti-inflammatory and hepatoprotective activity. Cassia Fistula is also working as a medicine for tumors of the abdomen, glands, liver, stomach and throat for burns, cancer, constipation, convulsions, delirium, dysuria, epilepsy, hematuria, pimples and glandular tumors.

**KEYWORDS:** Aragvadh(*Cassia fistula* Linn.), Sampaka, Chaturangula.**INTRODUCTION**

Ayurveda, the Indian structure of medicine, practiced since a long time for leading a disease free life. It relies mainly upon the medicinal plants for the management of various disorders. Some of these plants are inexistent and some are still unidentified. A few plants are still used as the richest source of medicines since the ages. Aragvadh (*Cassia fistula* Linn.) is one such plant drug which is existence used in the medicines in Ayurveda, Unani and Siddha systems of medicine since ages. These plants are often cultured for its beautiful flowers in the gardens. In this regard medicinal assets of Aragvadh (*Cassia fistula* Linn.) are existence explored to estimate the pharmacological potential of the drug. Cassia fistula Linn. also known as Purging Cassia or Indian Laburnum is an significant medicinal plant used in Indian system of medicine. The species is natural to the Indian subcontinent and together regions of Southeast Asia. It has varieties from southern Pakistan eastward throughout India to Myanmar and Thailand and south to Sri Lanka. In literature, it is closely related with the Mullai (forest) region of Sangam landscape. It is the national tree of Thailand, and its flower is Thailand's national flower. It is also the state flower of Kerala in India and of massive importance amongst the Malayali population. In Vedic

Literature, the dried branches of Aragvadh are used for Ritual performances (Ap. Gr. 7/18/7). *Cassia fistula* Linn. (Family: Caesalpiniaceous) is a modest to medium sized deciduous tree increasing up to 9 meters height and having dispersion branches. Leaves are 20 – 40 cm long par pinnate. Leaflets are large oblong lanceolate, acute or acuminate tip and pubescent beneath with numerous close slender main nerves. Flowers are bright yellow in colour and are found on long slender pendulous racemes. Fruits are pendulous, cylindrical, nearly straight, dark brown or brownish black, smooth, shining, hard, indehiscent. Seeds are many, broadly ovate, smooth, and light brown to dark brown in colour. *Cassia fistula* Linn. has revealed numerous pharmacological activities like anti-fungal, antimicrobial, antipyretic, larvicidal, analgesic, anti-inflammatory, hepatoprotective, anti-oxidant, anti-tumour, and hypoglycaemic. Ayurvedic medicine recognises its use in Vibandha, Udavarta, Gulma, Shula, Udararoga, Hridroga and Prameha.

Aragvadh is used in Ayurvedic remedies for therapeutic flatulence, inflammation, skin diseases, abdominal distension, hepato biliary disorders, constipation, intermittent fever, worm infestation and especially for black water fever. Acharya Charak has included

Aragvadha (*Cassia fistula* Linn) in Kusthaghna, Kandughna Mahakashaya while Acharya Sushrut included in Aragvadhadi, Shyamadi, Lakshadi,

Tiktakandha, Adhobhagahar and Kaphasamana Gana. Acharya Vagbhatta included Aragvadha (*Cassia fistula* Linn) in Virechan, Aragvadhadi, and Shyamadi Gana.

Sr. No.	Nighantu	Gana	Guna	Rasa	Veerya	Vipaka	Doshghanta
1	Bhav prakash Nighantu	Haritakyadi	Guru	Madhura	Sheet	-	Pittahara, Kaphahara
2	Dhanvantari Nighantu	Guduchyadi	Laghu, sar	Madhura	Sheet	-	Vatahara, Pitahara
3	Raj Nighantu	Prabhadradi	-	Madhura	Sheet	-	Kaphakara
4	Kaiyadev Nighantu	Haritakyadi	Guru, Mridu	Madhura, Tikta	Sheet	Madhura	Vatahara, Pitahara
5	Madanpal Nighantu	Haritakyadi	Guru, Mridu	Madhura	Sheet	Madhura	Vatahara, Pitahara
6	Shaligram Nighantu	Astavarg	Guru, snigdha, Mridu	Madhura	Sheet	Madhura	Pitahara, Kaphahara
7	Adarsha Nighantu	Putikarnayadi	Guru, Mridu	Madhura	Sheet	Madhura	Pitahara, Kaphahara

### Botanical depiction

**Habit:-** It is moderate to medium sized deciduous tree, 8 to 15 m in height with a straight trunk and spreading branches. The stem bark is greenish pale grey, smooth and slender when young and dark brown, rough when old.

**Habitat:-** Plant scattered throughout the greater part of India, Arising upto and altitude of 1220m in the sub-Himalayan tract and outer Himalaya, in Kumaon, chiefly in Haridwar, Narendra Nagar, Dehradun, Kashipur and abundant in deciduous forest tracts throughout upper Gangetic plain of Bengal, Central India and deciduous forests of South India. It is a favourite garden, avenue and ornamental tree being planted commonly. Found also in Ceylon, Malaya, China and other regions.

**Root:-** Root is reddish brown and rough externally with numerous horizontal lenticels. The outermost tissue of bark can be peeled off easily. The inner surface of fresh bark is smooth and light pink in colour. The wood is absorbent, light yellow in colour and fibrous, irregular, woody fracture.

**Stem:-** When new the outer surface of stem is compact, about 0.2 inch thick, smooth and greenish to pale grey in colour but olden stem are dark brown to greyish white with rough surface; wood is porous, yellowish white in colour; fracture tough rough.

**Leaf:-** Paripinnately, compound and alternate, stipules 20-40cm long, leaf base pulverous, ovate.

**Leaflets:-** With 3-8 pairs of opposite leaflet, acute or shortly acuminate, ovate-lanceolate, base cuneate; 2-5 inch by 1.5-3.75 inch, subcoriaceous, glabrous and bright-green above, pale and more or less silver pubescent below, particularly on the novation beneath, lateral nerves numerous, branching; petioles 0.25-0.5 inch long, stipules minute, pubescent.

**Inflorescence:-** Axillary or extra axillary pendent, lax, branched racemes.

**Flower:-** Flowers big, fragrant, bright yellow, in lax, pendulous racemes, 12-20 inch long; pedicels 1.5-2.5 inch long, pubescent; bracts minute, caduceus.

**Fruit:-** Pods are cylindrical, 40-70cm long and 3-4cm in diameter, straight or slightly curved, pendulous, smooth, shining dark brown, indehiscent, finely striated transversally; seeds numerous, horizontal, in black, sweet pulp and completely separated by thin, transverse dissepiments, each compartment filled with black pulp and containing one seed.

**Seed:-** Seeds, numbering 25 to 100 in each pod, are small, ovoid, slightly compressed, parallel with dissepiments, smooth shining and yellowish brown with a well-marked raphe; cotyledons flat; albumen horny.

**Wood sapwood:-** wide, white or pale dirty white in colour; perishable.

### Aragvadha (*Cassia fistula* linn.) ayurvedic yoga as per acharya charak

Sr. No.	Yoga	Roghadhikar	Ref.
1	Sheet Kasaya	Jawar	Ch.chi. 3/205
2	Jwaraghan rasa	Jawar	Ch.chi. 3/233
3	Patoladiniruha	Jawar	Ch.chi. 3/242-244
4	Aragvadhadiniruha	Jawar	Ch.chi. 3/245-246
5	Virechanayoga	Raktapitta	Ch.chi.4/57-58

6	Darviadikwath	Kustha	Ch.chi. 7/46
7	Kanakbinduarishta	Kustha	Ch.chi. 7/76-79
8	Kritmal kwath	Kustha	Ch.chi. 7/80
9	Siddhartak kwath	Kustha	Ch.chi. 7/91-92
10	Sirishadi lepa	Kustha	Ch.chi. 7/96
11	Mahatiktak ghrit	Kustha	Ch.chi. 7/144-150
12	Mahakhadir ghrit	Kustha	Ch.chi. 7/152-156
13	Edgajadilepa	Kustha	Ch.chi. 7/161
14	Kushthghan lepa	Kustha	Ch.chi. 7/164
15	Mahapanchgavya ghrit	Unmad	Ch.chi. 10/18-20
16	Vachadi ghrit	Unmad	Ch.chi. 13/68-72
17	Virechan yoga	Grahani	Ch.chi. 15/178
18	Kaphaj pandughan yoga	Pandu	Ch.chi. 16/58
19	Pushkarmooladhi	Kasa	Ch.chi. 18/111
20	Sthiradi ghrit	Trimarma	Ch.chi. 26/23
21	Saptcchadadi yoga	Trimarma	Ch.chi. 26/57
22	Satavahadhoom varti	Trimarma	Ch.chi. 26/135
23	Urustambgha yoga	Urusthamba	Ch.chi. 27/27
24	Shangeshtadi churna	Urusthamba	Ch.chi. 27/34-35

#### Aragvadha (*Cassia fistula* linn.) ayurvedic yoga as per acharya sushrut

Sr. No.	Yoga	Roghadhikar	Ref.
1	Patra lavan	Vatavyadhi	Su.chi. 4/30
2	Drakshadi kwath	Vatrakta	Su.chi.5/8
3	Aragvadhadi kashay	Vatrakta	Su.chi.5/10
4	Varnashak yoga	Bhagandhar	Su.chi.6/30
5	Priyaladhi kwath	Kustha	Su.chi.9/7
6	Mahatikta ghrit	Kustha	Su.chi.9/8
7	Kusthhar yoga	Kustha	Su.chi.9/10
8	Dadrunashak lepa	Kustha	Su.chi.9/14
9	Shvitraghan lepa	Kustha	Su.chi.9/28
10	Neela ghrit	Kustha	Su.chi.9/29-33
11	Mahaneela ghrit	Kustha	Su.chi.9/34-36
12	Putikadhi lepa	Kustha	Su.chi.9/40
13	Kusthghan sarpi	Kustha	Su.chi.9/49
14	Mahavajrak ghrit	Kustha	Su.chi.9/56-63
15	Mahakusthaghan kwath	Mahakustha	Su.chi.10/4
16	Khadiradi kwath	Mahakustha	Su.chi.10/5
17	Arishtaprayoga	Mahakustha	Su.chi.10
18	Asavaprayoga	Mahakustha	Su.chi.10/7
19	Suraprayoga	Mahakustha	Su.chi.10/8
20	Lehaprayoga	Mahakustha	Su.chi.10/9
21	Kwathprayoga	Mahakustha	Su.10/9
22	Churkriya prayoga	Mahakustha	Su.chi.10/10
23	Ayaskriti	Mahakustha	Su.chi.10/12
24	Kasaya	Prameha	Su.chi.11/6
25	Utsaadan kasaya	Pramehapidika	Su.chi.12/9
26	Churnaprayoga	Pramehapidika	Su.chi.12/9
27	Kahalanarth kasaya	Vidradhi	Su.chi.16/24
28	Aragvadhadi kasaya	Visarpanaadistanaroga	Su.chi.17/40
29	Kshalanarth kasaya	Granthpacharbudaganda	Su.chi.18/6
30	Kaphgranthi lepa	Granthiapchiarbudgalganda	Su.chi.18/13
31	Pittajarbuda lepa	Granthiapchiarbudgalganda	Su.chi.18/33
32	Updansahar kwath	Vruddhiupdanshshalipada	Su.chi.19/35
33	Updansahar prakshaalan	Vruddhiupdanshshalipada	Su.chi.19/39
34	Padminikantakghan utsaadan	Ksudraroga	Su.chi.20/39
35	Vaalmikharalepa	Ksudraroga	Su.chi.20/51
36	Aragvadhadi sarpi	Shopha	Su.chi.23/11

### Phytochemistry

**Root bark:-** An imperative chemical called fistucadin, a hydroxy athraquinone kind complex and its antibacterial conclusion was reported from the root bark.

**Stem Bark and heart wood:-** The bark and the heart wood comprehend fistucadin an optically inactive leucoanthracyanidin 3, 4, 7, 8, 4'- pentahydroxyflavan along with barbaloin and rhein. N- Butanol extract of the powdered stem bark confined tannins. The benzene extracts yielded lupeol,  $\beta$ -Sitosterol and hexacosanol.

**Leave:-** Leaves encompass anthraquinone spinoffs, tannins, free rhein, rhein glycoside, Sennoside-A and Sennoside-B. They also contained kaempferol glycosides.

**Flowers:-** Other complexes isolated were: sitosterol, n-triancontanol, leucopelargonidin and a mixture of flavonoids and glucosides. Ceryl alcohol, kaempferol, rhein and new bianthraquinone glycosides, fistulin isolated from the ethanol extract of the flowers.

**Pods:-** An anthraquinone fistulic acid is attained from the alcoholic extract.

### Pharmacological actions

**Anti-Inflammatory:-** Dry fruits of *Cassia fistula* L. presented anti-inflammatory activity at 500 mg/ kg dose. 1:1 combination of the dried fruit extracts of *Solanum xanthocarpum* and *Cassia fistula* showed synergetic action at 500 mg/kg showed maximum inhibition of 75% compared to the 81% inhibition in diclofenac sodium treated positive control group. The aqueous extract of the leaves, stem bark, root bark and fruit pulp in a dose of 1gm/100 gm body weight created significant anti-inflammatory effect on albino rats. The aqueous extract of the fruit caused an inhibitory effect on the isolated hearts of the frogs and rabbits. At a dose of 80mg and above, it showed stimulant effect on the smooth muscle of rabbit duodenum and guinea pig ileum in vitro. The excerpt had a relaxant effect on the dog's intestine in vitro. On isolated rat uterus, the extract had slight stimulant action in dose 25mg- 1 gm.

**Purgative activity:-** The aqueous extract of the fruit pulp had significant purgative action; the activity is due to the presence of anthraquinones present.

**Antioxidant activity:-** The investigation suggest that the antioxidant properties of 90% ethanol extracts of leaves, and 90% methanol extracts of stem bark, pulp and flowers from *Cassia fistula*. The antioxidant action power was in the declining order of stem bark, leaves, flowers and pulp and was well correlated with the total polyphenolic content of the extracts. The motive for low antioxidant activity in the flower and pulp portions could be the presence of some pro oxidants, such as chrysophanol and reducing sugars which dominate the antioxidant compounds existing in the extracts. Thus, the

stem bark had extra antioxidant activity in terms of reducing power, inhibition of per oxidation and DPPH radical scavenging ability.

**Anti-leishmaniac activity:-** The effectiveness of *Cassia fistula* in the action of leishmaniasis, the effectiveness of concentrated boiled extract and hydroalcoholic extract of *C. fistula* on leishmaniasis was compared with intralesional injection of Glucantime [meglumine antimonate] in this study. Outcomes indicate that the *C. fistula* fruit gel rises the efficacy of intralesional meglumine antimonate for the treatment of cutaneous leishmaniasis. Combination therapy with intralesional meglumine antimonate and *C. fistula* fruit gel should be considered for the treatment of acute cutaneous leishmaniasis.

**Anti ulcer activity:-** The ethanol leaf extract (ELE) of *Cassia fistula* Linn. (Caesalpinaceae) was evaluated for anti ulcer activity touching pylorus ligation Induced gastric ulcer.

**Wound healing activity:-** *C. fistula* treated rats showed better wound closure, improved tissue regeneration at the wound site, and supporting histo pathological parameters relating to wound healing.

### Dosage

**Fruit pulp:-** 5to10gm

**For purgation:-** 10to20gm

**Root-bark decoction:-** 50 to 100ml

**Flowers:-** 5 to10gm

**Leaves:-** Mainly external use

### Cultivation and Collection

The plant is often cultivated as on ornamental plant in the gardens and on roadsides. The fruit are collected when ripe and then these are kept under the soil for seven days and dried in the sun. The pulp is to be separated after this and stored in airtight containers.

### CONCLUSION

In the current era, persons everywhere the world pursue a healthier and supplementary natural life style that leads to herbs are existence rediscovered and Aragvadha (*Cassia fistula* Linn) is one of the imperative herbal drug. This extensive fictional survey revealed that *Cassia fistula* Linn. is an imperative medicinal plant which can be used for curing different ailments. From the above it can be concluded that the drug Aragvadha (*Cassia fistula* Linn.) proved to have extensive medicinal value in the treatment of diseases like fever, skin disorders, abdominal disorders etc. It also has antitumor, hepatoprotective, anti-inflammatory, antibiotic, anti-fertility, antifungal, hypoglycemic etc., activities.

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