

**AYURVEDIC ASPECTS OF GUNJA (*ABRUS PRECATORIUS*) W.S.R.
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ABSTRACT

Use of poisonous plants for treating an illness is an age-old tradition in India. *Agada Tantra* (~Toxicology) is a branch of *Astanga Ayurveda* since its inception. This branch was clinically practiced during early age that's why it was given place among the eight branches. Many poisonous substances of plant, animal and mineral origin are described with their symptoms, diagnosis and treatment. *Ayurveda* emphasize on the use of many such poisonous plants to treat many diseases, after properly purifying them. Classical texts give reference of plenty of activity such as *Kusthaghna*, *Vishaghna* etc. possessed by various herbal drugs. *Gunja* which is a very common drug used in many in *Ayurvedic* formulations. In *Ayurveda* *Gunja* is described as *Sthavara Visha* as in modern science, it is irritant organic vegetable poison. Seed

is the most poisonous part, are ovoid, scarlet, and red with a black notch at the hilum. As per Drugs and Cosmetics ACT, *Gunja* is a Schedule E1 classified herb. This means, the oral *Ayurvedic* medicines containing *Gunja* can only be taken under strict medical supervision. This article suggests the *Ayurvedic* review of *Gunja* w.s.r. to *Agadtantra*.

KEYWORDS: *Gunja*, *Ayurveda*, *Sthavara Visha*, *Agadtantra*.

INTRODUCTION

The *Gunja* (*Abrus precatorius*) was in earlier times used to weigh gems and precious stones. As said by realistic recordings the *Gunja* plant was used to weigh the famous Kohinoor Diamond also. In some parts of South America the seeds of this plant are used as necklaces

for protecting children against illnesses particularly. This plant is inhabitant to the Himalayas in India and is also found in some parts of Southern India. Today, it is also being produced from Hawaii, southern parts of America, West Indies, as well as Africa.^[1]

Gunja according to Samhitas

1. Charaka Samhita

The color of *Gunja* is resembled with the

- Colour of *Shuddha rakta*^[2]
- *Shuddha Arthava*^[3]
- *Kakanantika Kushta*^[4]

2. Sushruta Samhita

The use of *Gunja* is stated in the treatment of *Dushyodara*, *Kaphaja Visarpa*, *Medoja Granthi*, *Kaphaja Gndamala*, *Arshas*, *Indralupta* in *Sushruta Samhita* and also affirmed in the group of 8 *Mula Vishas*^[5] and in the context of *Pratisaraniya Kshara*.^[6]

3. Ashtang Hridaya^[7]

Its uses in *Arshas*, *Udara Roga*, *Shwitra*, *Indralupta* and *Galaganda* are mentioned by *Vagbhata*.

4. Sharangadhara samhita^[8]- *Mana Paribhasha* (as *Ratti*) is said by *Sharandhara*.

5. Yoga ratnakara^[9]- *Mana Paribhasha* is also said.

6. Harita samhita^[10] stated its uses in the treatment of *Dadru Kushta*, *Pittaja Visarpa* and *Visha*.

7. Rasashastra texts

Rasa Tarangini –Upavishavarga^[11]

Rasaratna Samucchaya, *Rasendra Chudamani*^[12]

8. Amara Kosha^[13] – *Mana Paribhasha*

AIM: To study the Ayurvedic aspects of *Gunja*

OBJECTIVE

- To collect the literature review.
- To study the systemic effect and to study the toxicity of *Gunja*.

Vernacular names^[14]

Botanical name	:	<i>Abrus precatorius</i>
Family	:	Leguminosae
Sanskrit	:	<i>Churamani, Raktala, Uchchata, Vaktrashalya, Vanya, Raktika, Kakatundika, Kakini, Kamboji Rakta, Angaravallari, Aruna, Dhvankshanaka, Vayasadini, Kakachinchika, Durmogha, Gunjika, Kakahanti, Bhillhushnika.</i>
Hindi	:	<i>Ratti, Ghungchi, Gunja, Chirmiti Kuncha, Rati.</i>
Punjabi	:	<i>Mulati</i>
English	:	Indian liquorice, Jequirity, Rosary Pea, Lucky bean, Prayer beads, Precatory bean, Weather plant, Crabs eye.
Tamil	:	<i>Adisamiyai, Adingam, Atti, Edalagam, Kandam.</i>
Telugu	:	<i>Atimadhuramu, Gurija, Guruginja, Kukkutamu.</i>
Malayalam	:	<i>Kunni, Kakani, Klitakkam, Irattimadhuram, Sekkunni.</i>
Gujrati	:	<i>Chanauthi</i>
Bengali	:	<i>Kunch, Koonch, Chunhali</i>
Pharsi	:	<i>Chasmekhrosh</i>
Urdu	:	<i>Ghunchi</i>

Cassification^[15]

Ayurvedic	:	<i>Sthavaravisha- Upavish- Mulavisha- Beejvisha</i>
Modern science	:	Irritant organic vegetable poison.

Description

Commonly it is occurring up to a height of 3500feet above the sea level. It grows in tropical climates such as India, Sri Lanka, Thailand, tropical Africa and the West Indies. In Himalayas ascending to 900m, spreading throughout plains, on hedges bushes in exposed and characterized by smooth, glossy surface and bright scarlet.^[16]

Colour	:	Red-Black, White
Taste	:	Sweet
Odour	:	Odourless
Stem	:	Woody erect or twinner, flexible, branched angular or cylindrical solid or fistular attaining 4.5m height and 1.2cm diameter.
Root	:	Much branched tap root, having bacterial nodules
Leaves	:	Simple, alysicarpus, modified partly or wholly in to tendrils

- Flowers** : 1-2 cm. long, Medianly zygomorphic hermaphrodite pedicellate slightly Perigynous, Complete and pentamerous. Pinkish or bluish in colour.
- Seed** : Non-endospermic, globose, turgid with a black spot, sometimes pure white.
- Fruit** : 2.5 to 4cm long, 3 – 5 seeded, Legume, indehiscent, lomentum
- Flowering** : In august to September
- Fruiting** : Fruits ripen during winter season
- Extra Features** : Patch hilum, ovoid or sub-globular, 5-8 mm long, 4-5 mm broad.^[17]

Table.1:- Varieties of Gunja.

Different Nighantus	Number of Varieties	Varieties of Gunja
<i>Bhavaprakasha Nighantu</i>	2	<i>Shweta and Rakta</i>
<i>Kaiyadeva Nighantu</i>	2	<i>Rakta and Shweta</i>
<i>Shivadasa</i>	2	<i>Krishna, Aruna</i>
<i>Raja Nighantu</i>	3	<i>Shweta and Rakta, Kaakaadani</i>
<i>Priya Nighantu</i>	2	<i>Shweta and Rakta Beeja</i>

Active Constituents

Gunja seeds contains a number of constituents like alkaloids, flavonoids, tannins, triterpenoids, proteins etc., amongst which a toxalbumin, abrin, is considered primarily responsible for the toxic effects of the seeds. Abrin is a highly toxic protein present in the seeds to an extent of about 0.15 %.^[18]

Ayurvedic Properties^[19]

- Rasa** : *Tikta, Kashaya*
- Guna** : *Ruksha, Laghu, Tikta*
- Virya** : *Ushna*
- Vipika** : *Katu*

Dosha Karma : *Kaphavathara, Keshya*

Local Action : Antifungal, Wound healing, Analgesic, Antimicrobial Anti-leprosy, Anti- Inflammatory, CNS depressant, Antihelmints, Antispasmodic.

Table No. 2: Internal Actions.

Sr. No.	System	Karma
1.	<i>Pachan Sansthana</i> (Digestive System)	<i>Snehnana</i>
2.	<i>Rakatwaha Sansthana</i> (Circulatory System)	<i>Hridya-uttejaka</i>
3.	<i>Swasan Sanshtan</i> (Respiratory System)	<i>Kaphanissaraka</i>
4.	<i>Prajanan sansthan</i> (Reproductive System)	<i>Garbhashauttejak, Vajikarna,</i>
5.	<i>Mutravah sansthan</i> (Excretory System)	<i>Muttarala</i>
6.	<i>Twaka</i> (Skin)	<i>Kusthaghana</i>
7.	<i>Tapakram</i> (Fever)	<i>Jwaraghana</i>
8.	<i>Nadisansthan</i>	<i>Balaya</i>
9.	<i>Satmikarna</i>	<i>Beeja- Visha</i>

Therapeutic uses^[20]

Arshas: 1. *Gunja* along with *Kukkuta Purisha*, *Haridra*, *Pippali Churna* pasted with *Gomutrapitta* should be applied.

2. *Varti* is made out of *Gunja*, *Swarana*, *Kushmanda Beeja* also applied.

Krimidanta: It relieves the pain caused by dental caries if its root is chewed with teeth.

Avabahuka: If *Gunja* seeds are applied on the site of *avabahuka*, *vishvachi*, *sciatica* and other *Vataja* pain, it relives pain immediately.

Gandamala: Oil cooked with root and seeds of *Gunja*, by massage and *nasya*, chronic *gandamala* should be cured.

Indralupta: The paste of *Gunja* is applied frequently on the incised scalp. Along with it *rasayana* drugs should also be used.

Visarpa: Paste of *Gunja* leaves is applied in erysipelas caused by *Pitta Dusthi*

Netramaya: *Gunja* root pounded with goat's urine removes defects of vision and blindness. It also cures purulent ophthalmia.

Putana pratishedha: *Aushadhi Dharana* with *Kakadani*, *Chitra Mula*, *Bimbi*

Kushta: *Gunja* powder with butter removes *Kushta* if the paste is applied. If the part is pasted with butter milk, kept in a copper vessel, it prevents relapse of the disease.

Kaphaja Visarpa: Paste of *Gunja* is applied along with *Tagara*, *Rasna*, *Vacha*, *Sheetashiva*, *Indravaruni*, *Palindi*, *Munjaata*, *Mahikadamba*.

Shwitra: *Lepa* is used with *Gunja*, *Bhallataka*, *Chitraka*, *Sudha*, *Arka Mula*, *Trikatu*, *Shankha Churna*, *Tuttha*, *Kushta*, *Lavana Panchaka*, *Dvikshara*, *Langali*, *Snuhi Ksheera*, *Loha Patra*.

Medoja Granthi: *Taila Paka* of *Gunja* is used with *Karanja*, *Putikaranja*, *Vamsha*, *Ingudi*, and *Gomutra*.

Andha Putana Pratishedha: *Aushadhi Dharana* with *Katutumbi*, *Kakadani*.

Dushyaodara: *Gunja* along with *Kakadani Mula Kalka* is given to drink.

Other uses mention in *Samhita*

Amvata, Visarpa, Kushta, Trshna, Putana graham, Vrana, Kaphaja Netraamaya, Kaphaja Udara, Gandamala, Graha, Shwitra, Jwara, Mukhashirsha ruja, Vatavyadhi, Mukhashosha, Bhrama, Kandu, Galaganda, Madavinashana, Mohavinashana, Indralupta, Urusthambha, Arshas, Medoja Granthi, Krimi, Shwasa, Visha,

Gunja usage in weights^[21]

Gunja seeds are used as an important unit of measurement.

1 *Gunja* seed is considered as 125 mg of weight.

Parts Used : Seeds, Leaves and Roots

Aushadhi Matra^[22]

Beeja Churna : 60-100 mg.

Mula Churna : 1-3 gm.

Ghatak Matra (Fatal Dose)

Seeds : 1 – 2 if ingested.

Abrin : 90 -120 mg.

Ghatak Kala (Fatal Period) : 24 to 72 hours.

Vishakt Lakshan

Typical GI symptoms include nausea, severe stomach cramps, vomiting, tachycardia, coma, cold sweats and diarrhea, resulting in more serious poisonings with severe dehydration and death. Convulsions may occur if higher dose is taken. Symptoms may persist up to 10-12days. Death may also occur due to Circulatory collapse.

Vishakat Chikitsa

- Initially peel off the needle of *Gunja*.
- Grapes, *Imli* (Tamarind), *Vrikshammala* (*Garcinia indica*) fresh juice should be given.
- *Chaulai Swarasa* (*Amaranthus*) juice with *Mishri* (rock sugar).
- Cow's milk with *Sharkara* (Sugar).

Contraindications^[23-24]

All the parts of the plant *Gunja* are poisonous. *Abrus precatorius* is contraindicated in gastric and peptic ulcers, because it is known to develop haemorrhages in GI tract if chewed, swallowed, and may prove fatal. Prolonged use of *Abrus* can lead to anemia and can increase the white blood cell count tremendously. It should be taken under professional guidance and avoided by pregnant women and infants.

Shodhana of Gunja^[25]

The *Sodhana* process is prepared in such a way so as to diminish the toxic effects of the harmful component and also in some cases to potentiate the effect of the constituents of the drug. The *Gunja* seeds are tied in a two layered cloth, kept suspended in cow milk taken in a pot (*Dolayantra*). The milk is boiled with the *Gunja* seed pack suspended for 1 *Yama* (3 hours). This procedure is called *Swedana*. After this, the seeds are taken out, washed in hot water, dried and preserved.^[24]

1st Method: *Gunja* seeds are powdered and tied in a *Pottali* and *Swedana* is done with *Godugdha* for *Dwiyama* in *Dolayantra*.

2nd Method: *Gunja* seeds are powdered and tied in a *Pottali* and *Swedana* is done with *Kanji* for one *Yama* in *Dolayantra*.

3rd Method: *Rastarngni- Gunja Seeds* are taken and held inside a *Pottali* and suspended in *Dolayantra* for 1 *Prahar* (3Hrs) for *Shodhana* in *Godugdhia*.

Postmortem Appearance^[26]

- Petechial hemorrhages shows under skin, pleura, pericardium and peritoneum.
- Internal organ congested.
- Local necrosis found.
- *Gunja* Needle may be found at the site of wound.

Medicoleagal Aspect

- Used as homicidal, accidental poisoning.
- Used as arrow poison.
- Commonly used as cattle poison.

Important Formulations^[27-28]

Gunja Tailam, Gunjadya Tailam, Gunjaphala Tailam, Gunja Patradi Lepa, Gunjaphala Lepa, Gunjadi Lepa, Gunjasurana, Gunjamoolanjana, Gunjagarbha Rasayana, Grahani

Gajakesari Rasa, Rajamrighanka Rasa, Gunjadivarti, Neelibhringadi Taila, Mehanalo Rasa, Yogishwara Rasa, Neelibhrungadi Tailam, Sarivadi Vati.



Fig.1 Red Gunja (*Abrus precatorius*)



Fig.2 White Gunja (*Abrus precatorius*)

CONCLUSION

Gunja is very potent herbal plant used as various purposes. All the parts are poisonous; mostly seeds are hazardous to human due to its irritant property. By *Shodhan Sanskara*, *Gunja* has most beneficial effects. In Various *Samhita* various *Yogs* are explained of *Gunja*. *Gunja* seeds contain Abrin and Abralin as toxic ingredient shows some medicinal property. After *Shodhana* *Gunja* shows some *Muttarala*, *Kusthaghana* *Jwaragha*, *Krimighna*, *Balya*, *Vrishya*, properties. By its hot potency (Ushna virya) it has some local action like *Kusthaghana*. Abrin and Abralin shows antimicrobial, analgesic, anti-inflammatory, ant-helmintic activities.

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