

TYPE OF ABRUS PRECATORIUS AND ITS TOXICOLOGICAL ASPECT OF SIDDHA MEDICINE – REVIEW

Dr. K. Pooja¹, Dr. M. Thiruthani

1-3rd year pg scholar, 2-HOD,

Department of Nanju maruthuvam, Govt siddha medical college, Palayamkottai.

ABSTRACT:

Abrus precatorius (Kundrimani), commonly known as jequirity bean or rosary pea, is a herbaceous flowering plant in the bean family Fabaceae. It is a slender, perennial climber with long, pinnate-leafleted leaves that twines around trees, shrubs, and hedges. This plant is commonly known as Indian liquorices. In siddha system is one of the indigenous system of medicine. They have been existence for several years. In the siddha medicinal system use of poisonous plants helps to cure some disease. It is important to have an awareness regarding the poisonous plants which when used in the proper, prescribed dose, acts are harmful to living organisms. All parts of the plants have medicinal properties so it is a very valuable medicinal plant which is utilized in traditional system of medicine. The seed is found in a variety of colours such as Black, Red, White and Yellow are view in siddha literature. The review reveals type of plant in siddha aspect, toxic parts of the plant, chemical constituents, sign and symptoms of toxicity and its use in traditional Indian system of siddha medicine.

KEY POINTS: *Abrus precatorius*, kundrimani, toxicity

INTRODUCTION:

Abrus precatorius, commonly known as jequirity bean or rosary pea, is a herbaceous flowering plant in the bean family Fabaceae. It is a slender, perennial climber with long, pinnate-leafleted leaves that twines around trees, shrubs, and hedges. This plant is commonly known as Indian liquorices. In siddha system is one of the indigenous system of medicine. They have been existence for several years. In the siddha medicinal system use of poisonous plants helps to cure some disease. It is imporatant to have an awareness regarding the poisonous plants which when used in the proper, prescribed dose, acts are harmful to living organisms. All parts of the plants have medicinal properties so it is a very valuable medicinal plant which is utilized in traditional system of medicine. Seeds are used as a poultice in the vagina in Siddha

medicine as an abortifacient and it also reported to possess antidiarrheal, antifertility, antispasmodic, antiyeast, antidiabetic, embryo toxic, mitogenic activity, protease(HIV) inhibition, antigonadotropin, agglutinin activity, antibacterial, antioxidant, anticataractic and teratogenic effect. The seed is found in a variety of colors such as Black, Red, White and Yellow are view in siddha literature. The crushed seeds is poisonous. The seeds are tasteless and odourless. The seeds contain an active principle abrin, a toxalbumen, which is similar to viperine snake venom; also present are abrine (N-methyltryptophan), an aminoacid, haemoglutinin in the cotyledons; a lipolytic enzyme, and abralin, a glucoside. Abrin inhibits protein synthesis and cause cell death.

TYPES OF ABRUS PRECATORIUS (RED, WHITE, BLACK, YELLOW) IN SIDDHA ASPECT:



	Abrus Precatorius L Fabaceae	Abrus Precatorius L Fabaceae (Black Seed Variety)	Abrus Precatorius L Fabaceae (Red Seed Variety)	Abrus Precatorius L Fabaceae (White Seed Variety)	Abrus Precatorius L Fabaceae (Yellow Seed Variety)
Vernacular Names	<i>Gunja</i> (Sanskrit), <i>Rati</i> , <i>Gunchi</i> (Hindi), <i>Kunch</i> , <i>Koonch</i> (Bengali), <i>Gumchi</i> , <i>Chanothi</i> (Gujarati), <i>Shangir</i> (Kashmiri), <i>Gurugunji</i> (Kannada), <i>Kunni</i> , <i>Gundumani</i> (Malayalam), <i>Mulati</i> (Punjabi), <i>Gundumani</i> , <i>Kunthamani</i> (Tamil), <i>Guruvenda</i> (Telugu), <i>Gunja</i> , <i>Gunchi</i> (Marathi), <i>Raturmani</i> (Assam).	<i>Black Gundumani</i> (Tamil)	<i>Red Gundumani</i> (Tamil)	<i>Indian Liquorice</i> (English), <i>White kunduma-ni</i> (Tamil), <i>Kumi</i> (Malayalam), <i>Rektika</i> , <i>Gun-ja</i> (Sanskrit), <i>Gunchi</i> , <i>Ratti</i> (Hindi), <i>Gulganji</i> (Kannada)	<i>Yellow Gundumani</i> (Tamil)
Botanical Description	A beautiful, much-branched, slender, perennial, deciduous, woody, prickly twining or smooth, textured, brown. Leaves are	A beautiful, much-branched, slender, perennial, deciduous, woody, prickly twining or smooth, textured, brown. Leaves	A beautiful, much-branched, slender, perennial, deciduous, woody, prickly twining or smooth, textured,	A climbing, woody, vine grows up to 4-6 m height, leaves alternate, compound, feather-like, with small oblong leaflets. Petals rose to pink,	A beautiful, much-branched, slender, perennial, deciduous, woody, prickly twining or smooth, textured, brown. Leaves stipulate, pinnately

	<p>stipulate, pinnately compound, leaflets 7-24 pairs, 0.6-2.5 x 0.4-1.2 cm, turgid, oblong, obtuse at both ends, appressed hairy. Flowers in axillary racemes, shorter than leaves, pink or pinkish-white. Calyx-lobes short, appressed hairy. Pods 1.6-5.1x0.8-1.6 cm, turgid, oblong, appressed hairy, with a sharp deflexed beak, silky-textured, 3 to 6 seeded. Seeds elliptic to sub-globose, <i>ca</i> 0.5 cm in diam; smooth, glossy, shining red with black blotch around the hilum.</p>	<p>are stipulate, pinnately compound, leaflets 7-24 pairs, 0.6-2.5 x 0.4-1.2 cm, turgid, oblong, obtuse at both ends, appressed hairy. Flowers in axillary racemes, shorter than leaves, pink or pinkish-white. Calyx-lobes short, appressed hairy. Pods 1.6-5.1x0.8-1.6 cm, turgid, oblong, appressed hairy, with a sharp deflexed beak, silky-textured, 3 to 6 seeded. Seeds elliptic to sub-globose, <i>ca</i> 0.5 cm in diam; smooth, glossy, shining red with black blotch around the hilum.</p>	<p>brown. Leaves stipulate, pinnately compound, leaflets 7-24 pairs, 0.6-2.5x0.4-1.2 cm, turgid, oblong, obtuse at both ends, appressed hairy. Flowers in axillary racemes, shorter than leaves, pink or pinkish-white. Calyx-lobes short, appressed hairy. Pods 1.6-5.1x0.8-1.6 cm, turgid, oblong, appressed hairy, with a sharp deflexed beak, silky-textured, 3 to 6 seeded. Seeds elliptic to sub-globose, <i>ca</i> 0.5 cm in diam; smooth, glossy, shining red with black blotch around the hilum</p>	<p>stamens 9, flowers are many and appear in the leaf axils along the stems. 3-10 cmlong, red to purple or white fruit legume, 4 cm long, seeds, ovoid, ellipsoid, hard textured and of smooth surface, compressed, white colour flowers produce white coloured seeds, 5.4-6.1 mm in length and 2.9-4.3 mm in width. Seeds white with a black spot.</p>	<p>compound, leaflets 7-24 pairs, 0.6-2.5x0.4-1.2 cm, turgid, oblong, obtuse at both ends, appressed hairy. Flowers in axillary racemes, shorter than leaves, pink or pinkish-white. Calyx-lobes short, appressed hairy. Pods 1.6-5.1x0.8-1.6 cm, turgid, oblong, appressed hairy, with a sharp deflexed beak, silky-textured, 3 to 6 seeded. Seeds elliptic to sub-globose, <i>ca</i> 0.5 cm in diam; smooth, glossy, shining red with black blotch around the hilum</p>
Flowering and	August-January.	September-	August - January	August-December	August-December

Fruiting		December			
Distribution	Throughout India, Sri Lanka, Thailand, Philippine Islands, South China, tropical Africa and the West Indies.	Tamilnadu, particularly in Eastern Ghats	Tamilnadu, particularly in Salem, Dharmapuri and Namakkal districts.	Throughout India, particularly in Tamilnadu, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh.	Tamilnadu, particularly in Eastern Ghats
Propagation	By seeds	By seeds	By seeds	By seeds	By seeds
Parts used	Leaves, roots and seeds	Roots, leaves and seeds	Whole plant	Roots, leaves and seeds	Leaves, roots and seeds
Phytochemical Constituents	Abricin, abrin, abrasine, abraline, abrine, abrusgenic acid, abruslactone, abruscic-acid, anthocyanins, abrusgenic-acid-methyl ester, choline, campesterol, glycyrrhizin, hypaphorine, gallic acid, pectin, pentosan-s N, n-dimethyl-tryptophan, N-n-dimethyl-tryptophan	Abricin, abrin, abrasine, abraline, abrine, abrusgenic acid, abruslactone, abruscic-acid, anthocyanins, abrusgenic-acid-methyl ester, choline, campesterol, glycyrrhizin, hypaphorine, gallic acid, pectin, pentosan-s N, n-dimethyl-tryptophan, N-n-dimethyl-tryptophan	Abricin, abrin, abrasine, abraline, abrine, abrusgenic acid, abruslactone, abruscic-acid, anthocyanins, abrusgenic-acid-methyl ester, choline, campesterol, glycyrrhizin, hypaphorine, gallic acid, pectin, pentosan-s N, n-dimethyl-tryptophan, N-n-dimethyl-tryptophan	The seeds contain flavonoids, steroids, alkaloids, triterpenoids, saponins, gums and mucilages, tannins, phenolic compounds, protein and amino acids, fixed oils and fats.	Abricin, abrin, abrasine, abraline, abrine, abrusgenic acid, abruslactone, abruscic-acid, anthocyanins, abrusgenic-acid-methyl ester, choline, campesterol, glycyrrhizin, hypaphorine, gallic acid, pectin, pentosan-s N, n-dimethyl-tryptophan, N-n-dimethyl-tryptophan-metho

	tophan-metho- cation-methyl ester, P-couma- roylgalloyl- glulodelphinidin, hypaphorine, picatorine.	tophan-metho- cation-methyl ester, P-couma- roylgalloyl- glulodelphinidin, hypaphorine, picatorine.	tophan-metho- cation-methyl ester, P-couma- roylgalloyl- glulodelphinidin, hypaphorine, picatorine.		cation-methyl ester, P-couma- roylgalloyl- glulodelphinidin, hypaphorine, picatorine.
Medicinal uses	The seeds are antimicrobial, cytotoxic, diuretic, emetic, antitumor, aphrodisiac, anodyne, febrifuge, laxative, purgative, sedative, vermifuge, antidote, expectorant, emollient, hemostat, and used in several diseases to cure snake bite, boil, cancer, cold, cough, diarrhoea, fever, gonorrhoea, jaundice, headache, malaria, rheumatism, ophthalmia and night-blindness.	The seeds are used in treating jaundice, arthritis, skin diseases, purgative, snake bite, scorpion sting and leucoderma. The aerial parts decoction is also used for treating certain infections like diarrhoea, leucorrhoea, gonorrhoea and dysentery. Root juice is useful for ulcer, diarrhoea and abdominal pains.	The whole plant powder mixed with Cow's milk is given orally for cough, ulcer, fever and asthma. Seed paste is applied externally for snake bite, scorpion sting, ulcers, inflammatory conditions, scabies and healing of wounds.	The seeds are useful in treating eye disease, jaundice, pain, arthritis, leucoderma and poisonous bite. Seed paste is used as antiseptic, abortifacient, antitubercular, antidiabetic, antidyseric, and also useful for treating paralysis, skin diseases, ulcer, inflammation and eye disorders. The leaves are useful in tetanus and anti-suppurative activities. A paste of the seed is given in purgative, nervous diseases, gonorrhoea, hair	The seeds are used in snake bite, scorpion sting, skin ailments, eye troubles, diabetes, arthritis and inflammation. Root paste mixed with coconut oil is applied to treat skin diseases. Fresh decoction of the leaves is anthelmintic, and cures fever, jaundice, ulcer and diarrhoea.

	<p>The seeds are also used to manage diabetes and chronic nephritis. The leaves are used for their anti-suppurative properties, tetanus, and to prevent rabies. Paste of roots is administered to cure abdominal pains and tumors. The paste with fresh rhizome of <i>Curcuma longa</i> is externally applied on wounds</p>			<p>loss and delivery pain. It is also useful for cytotoxicity, anti-inflammatory, antibacterial, snake bite, diabetes, wound healing, cancer, fever ulcer, asthma, leprosy, tumor and tubercular glands. The leaves and roots are diuretic, alexeteric, astringent, anthelmintic and sweet. They are useful in treatment of inflammation, cough, strangury, pectroalgia and pharyngodynia. The seeds are purgative, astringent, toxic, abortifacient, bitter, acrid, trichogenous and aphrodisiac. Seeds paste is applied on affected part in skin ailments, asthma, paralysis, wounds, stomatitis, fever, alopecia, sciatica, stiffness of shoulder</p>	
--	---	--	--	--	--

				joints, tubercular glands and hyperdipsia.	
Poisonous Parts	Seeds	Seeds	Seeds	Seeds	Seeds
Toxic Constituents	Abrine, abrin and abrasine.	Abrine, abrin and abrasine.	Abrine, abrin and abrasine	Abrine, abrin and abrasine.	Abrine, abrin and abrasine
Poisonous Symptoms	Seeds are poisonous and causes vomiting, diarrhoea, nausea, shock, convulsions, as well as induce direct toxicity on the kidneys, cardiac poison, paralysis, gastroenteritis with purging and temperature fluctuation followed by death. Seeds are eaten by livestock, which causes vomiting, severe diarrhoea and weakness. The seed extract can cause eye injury.	Intake of seeds causes paralysis, vomiting, nausea, diarrhoea, extreme fever and lastly death. Consumption of seeds by livestock results in salivation, shivering, severe diarrhoea, abortion in pregnant livestock and even death	Consumption of seeds causes diarrhoea, vomiting, nausea, throat pain and inflammation in eyes. Seeds when eaten by animals cause severe diarrhoea, nasal discharge, weakness and even death.	Intake of seeds causes cardiac poison, paralysis, vomiting, high fever, inflammation in eyes and temperature fluctuation followed by death. Seeds along with other plant parts intake by animals result in shivering, salivation, acute diarrhoea and even death.	Seeds are poisonous and causes vomiting, high fever, inability to stand, gastroenteritis with purging, weakness, trembling of hands and lastly death. Intake of seeds by animals results in severe diarrhoea, vomiting and weakness.

--	--	--	--	--	--

CONCLUSION:

In this study conclude that toxic medicinal plants have some medicinal values. Certain precautions about those plants are enough to use these toxic plants as medication purpose.

ACKNOWLEDGEMENT:

The author conveys her thanks to The Principal, Government Siddha Medical College, Palayamkottai for granting permission to execute this work in the college premises. He conveys her thanks to Head of the Department, Department of Nanju Maruthuvam and Head of the Department, Department of Biochemistry, Government Siddha Medical College, Palayamkottai.

REFERENCE:

- Samuel Ehiabhi Okhale, Ezekwesiri Michael Nwanosike Abrus precatorius Linn (Fabaceae): phytochemistry, ethnomedicinal uses, ethnopharmacology and pharmacological activities.
- Varaprasad Bobbarala^{1*} and Varahalarao Vadlapudi² ¹For U Biosciences, A/4A, Park lane Residency, East point colony, Visakhapatnam-17. ²Department of Botany, Andhra University, Visakhapatnam-3, Andhrapradesh, India ABRUS PRECATORIUS L. SEED EXTRACTS ANTIMICROBIAL PROPERTIES AGAINST CLINICALLY IMPORTANT BACTERIA
- AMIT SARAF¹, APARNA SARAF² and ALKA CHATURVEDI¹ Phytochemical Analysis and Chemical Fingerprinting of Seeds of Abrus Precatorius L.
- aManisha Bhatia, bSiddiqui NA, aSumeet Gupta Abrus Precatorius (L.): An Evaluation of Traditional Herb
- Meena Prabha. P*¹, Chendraya Perumal. P², Praveen Kumar. M³, Soundarrajan⁴. S, Srinivasan. M⁵, R. Sampathkumar Pharmacological activities of Abrus precatorius (L.) seed.

- Niyogi SK., Deadly crab's eye: *Abrus precatorius* poisoning. The New England Journal of Medicine 1969;28:51.
- Anand RA, Kishore VO, Rajkumar V. *Abrus Precatorius* Linnaeus: A phytopharmacological review. J Pharm Res. 2010; 3(11):2585-2587
- van A Ross. Chemical Constituents, Traditional and Modern Medicinal Uses, Medicinal Plants of the World 1; 2nd ed.
- 5. Mensah AY, Bonsu AS, Fleischer TC. Investigation of the Bronchodilator activity of *Abrus Precatorius*. Int J Pharmaceut Sci Rev & Res. 2011; 6(2):10.
- 6. Acharya D, Sancheti G, Shrivastava A. Medicinal plants for curing common ailments in India Positive Health. 2004; 102: 28-30.
- 7. Frohne D, Pfander HJ. A Colour Atlas of Poisonous Plants, Wolfe Publishing Ltd. Germany. 1983; 291.

