

कुपीलु

Botanical name : Strychnous nux-vomica

Family : Loganiaceae

Vernacular Names

English name : Nux-vomica / poison nut tree

Malayalam name : Kanjiram

Synonyms

काकतिन्दुक – Fruit resembles fruit of Tinduka

विषतिन्दुक – resembles fruit of Tinduka, but it is poisonous

गरद्रुम – Tree bears fruits which are poisonous

जलद – Grows in watery place

काकपीलुक – Grows in forest like that of pilu trees

काकेन्दु – pulp is liked by crows

मर्कट तिन्दुक –Fruits are liked by monkeys

कारस्कर – Trees having poisonous nuts

नीलसार / कालस्कन्ध – wood is black in colour

स्फुर्जक – Poison acts very slowly

Vargeekarana

Acharya charaka and Susruta has not included the drug in any Varga or Gana.

Acharya Bhavaprakash.a has included the drug in Amradi Phala vagha.

Varieties

Two main varieties are most commonly seen

Strychnos wallichiana

Strychnos ignatti

Distribution

Native to the tropical and sub tropical regions.

Found wildly in the Southern part of the country up to an altitude of 400mtrs

MORPHOLOGY

Habit – Perennial deciduous tree growing upto 100ft.

Root – Thick, stout

Stem – Tree bears sharp and strong axillary spines. Bark is rough with lenticels

Leaves- Simple, opposite, Broadly elliptic, acute tip, glabrous, 3-5 nerved, base rounded, entire margin, Acute or acuminate tip, 3-5 nerved, Glabrous & shining.

Inflorescence – Terminal Compound cymes

Flower – Greenish white, numerous, short pedicel, pubescent

Calyx –greenish white coloured, 5 lobed

Corolla – 5 lobed, tubular

Androecium – stamens – 5

Gynoecium – 2 carpels, syncarpous, superior ovary

Fruit – Berry, Globose, slightly rough and shining, orange red when ripe

Seeds – Disc shaped, concave on one side, convex on other side, On the centre of the concave surface there is a hilum, and on the margin there is a projection called micropyle, connecting these is a ridge called Raphae.

Useful Part - SEEDS

Chemical Constituents

Strychnine - 1.25%-1.5%, Brucine - 1.7%, Isostrychnine, Vomisine, Loganic acid, Pseudostrychnine, Novacine, α – Colubrine, B - Colubrine. Among all the Chemical Constituents Strychnine and brucine are violent poisonous components in Kupilu.

Rasapanchaka :

Rasa- Katu, thikta

Guna- Snigdha ,laghu

Veerya- Ushna

Vipaka- Katu

Therapeutic indication

Kushta, Kandu, Arsa, Agnimandhya, Klaibya, Atisara, Visuchika , Apasmara, unmada , Nidranasapakshaghatha.

Nadi dourbalya

Anti – Microbial

Sedative

Amayika prayoga

In Vishuchika – Kupilu, Hingu, and Navasara is fried separately and mixed together and taken as pills (Sidha bhesaja – 4/277)

Karaskara thaila – applied locally in numbness.

Karaskara ghritha - as rasayana prayoga after treating chronic sandhivatha.

In agnimandhya – kupilu, hingu, navasara, made into pills with lemon juice. (Si.bhe 4/253)

Ardita – External application of Seed paste of Kupilu.

Chronic Ulcers and Wounds – Leaf Poultice is used.

Dose

Beeja Choorna : 60-125mg (Purified)

Oil – 3 to 5 drops

Formulations-Vishatinduka Taila,Agnitundi Rasa,Vishatinduka lepam

Kupilubeejadi kwatham,Mahavisagarbha tailam,Krimighatini Gutika

Lakshmi vilasa rasa.

Contra indications

Contra indicated for Pregnant and Lactating mothers.

Contraindicated for Hypertensive patients.

Side Effects include Restlessness,Anxiety,Liver Failure,Kidney Failure

Convulsions,Dizziness.

Antidote

Paribhadra – Erythrina verigata

Cows ghee and Cows milk.

Adulterants

Strychnous nuxblanda

Strychnous potatorum

Strychnine

Violently poisonous alkaloid is crystalline in nature.

Strychnine is a neurotoxin

Strychnine is a terrible tetanic poison, affecting the cerebrospinal system, but it kills without producing marked anatomical change,

It primarily affects the motor nerve fibers in the spinal cord which control muscle contraction, the victim will have spastic muscle contractions, resulting in death by asphyxiation.

After injection, inhalation, or ingestion, the first symptoms to appear are generalized muscle spasms.— within as few as five minutes — and take somewhat longer to manifest after ingestion, typically approximately 15 minutes.

With a very high dose, the onset of respiratory failure and brain death can occur in 15 to 30 minutes.

Lower dose produce symptoms include Seizures, cramps, Stiffness, hypervigilance, agitation

Seizures can start as early as 15 minutes after exposure and last 12 – 24 hours. They are often triggered by sights, sounds, or touch and can cause other adverse symptoms.

During seizures, it is associated with abnormal eye dilation, exophthalmos, nystagmus (Involuntary movements).

As strychnine poisoning progresses, tachycardia (rapid heartbeat), hypertension (high blood pressure), rapid breathing, cyanosis, sweating, water-electrolyte imbalance, trismus (lockjaw), Risus sardonicus (spasm of the facial muscles), Opisthotonus (dramatic spasm of the back muscles, causing arching of the back and neck) can occur.

The proximate cause of death in strychnine poisoning can be cardiac arrest, respiratory failure, multiple organ failure, or brain damage.

Sodhana

More than 4 methods of Shodhana of Kupilu is

Mentioned in the classics

- ❖ Kupilu seeds soaked in cow's urine for 7 days, fresh urine is taken everyday, seeds cleaned with warm water, then cooked with milk in Dola yantra for 3 hours and washed with warm water, outer skin is removed, cut into small pieces, fried in cow's ghee until it becomes brownish colour, and pulverised and used. (nimajjana, swedana, bharjana, Kshalana)
- ❖ Bharjana in cows ghee until colour becomes brownish, then cut into small pieces are pulverised (Rasa taragini - quickest method)
- ❖ Swedana in cows milk for 3 hours in Dhola yantra, seed outer cover is removed, dried, cut into small pieces and Pulverised (Rasa taragini – for attaining Utham shodhana)

LETHAL DOSAGE

The smallest dose, which is known to produce death in humans, is 30 grains, i.e., equal to one seed of Nux vomica.

The minimal oral dose of strychnine in an adult is 30–120 mg.

The lethal dose in children is 15 mg

TREATMENT OF TOXICITY

Stomach wash is done with KMNO₄

Charcoal Solution is administered to neutralize free strychnine

Patient kept in Dark room Under Sedation.



Strychnos Nux vomica L.



